Slate 100 / 1000 / 2100 Switchers

Operators Manual

Software Version 6.2

The Switcher Redefined

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Section 1:
Installation and Getting Started

This section covers the typical installation of a Broadcast Pix Slate system and some options. Other options that require installation are covered in their sections.

1.1 Broadcast Pix Slate 100

1.1.1 Slate 100 System Contents

The Broadcast Pix Slate 100 is comprised of the following components.

Broadcast Pix Software,
Showing the Multi-View

(VGA monitor
not included)

Broadcast Pix
SoftPanel

Software:

- BPSwitcher V6
- Inscriber TitleMotion Pro
  Character Generator
- Microsoft Windows XP

Workstation with Slate boards
installed, Keyboard, Mouse

Broadcast Pix Slate 100 System Includes:

Hardware

Workstation, with Slate board and I/O board
Inscriber USB Dongle, installed internally in the workstation at the factory
Keyboard and Mouse

Software

Broadcast Pix Software V6
Inscriber TitleMotion Pro Character Generator
Microsoft Windows XP and .NET

Requirements

To install a system you will also need:

At least one VGA monitor (at least 1280x1024 resolution)
Sync Generator or other source of house black burst (analog reference)

1.1.2 Wiring and Setting Up a Slate 100

For instruction on how to wire and set up a a Slate 100 system see the Slate 1000 section, starting at section 1.2.2.

The Slate 100 and Slate 1000 are identical systems except the 1000 has a physical control panel connected, while the 100 uses a SoftPanel. The SoftPanel can be reached from the **Panel** drop down menu, then **SoftPanel, Flash Player** in BPswitcher.

1.2 Broadcast Pix Slate 1000

1.2.1 Slate 1000 System Contents

The Broadcast Pix Slate 1000 is comprised of the following components.

Broadcast Pix Software,
Showing the Multi-View

(VGA monitor
not included)

Software:

BPSwitcher V6

Inscriber TitleMotion Pro
Character Generator

Microsoft Windows XP

Broadcast Pix
Control panel

Broadcast Pix
SoftPanel

Workstation with Slate boards
installed, Keyboard, Mouse

Broadcast Pix Slate 1000 System Includes:

Hardware

Broadcast Pix physical control panel (Control panel)
Workstation, with Slate board and I/O board
Network Crossover Cable, to connect panel to workstation
Inscriber USB Dongle, installed internally in the workstation at the factory
Keyboard and Mouse

Software

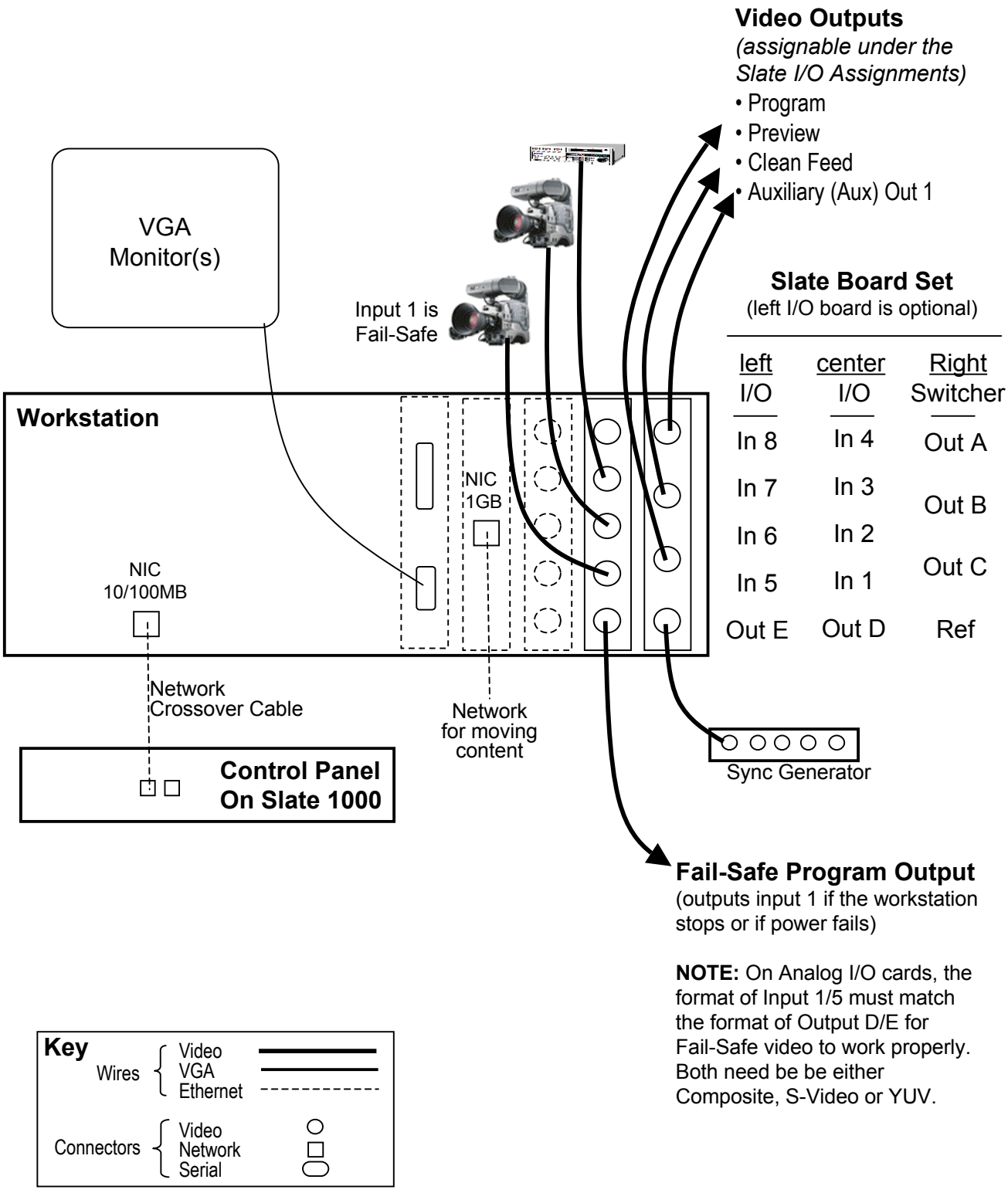
Broadcast Pix Software V6
Inscriber TitleMotion Pro Character Generator
Microsoft Windows XP and .NET

Requirements

To install a system you will also need:

At least one VGA monitor (at least 1280x1024 resolution)
Sync Generator or other source of house black burst (analog reference)

1.2.2 Wiring Diagram for Slate 1000 and Slate 100 Switchers

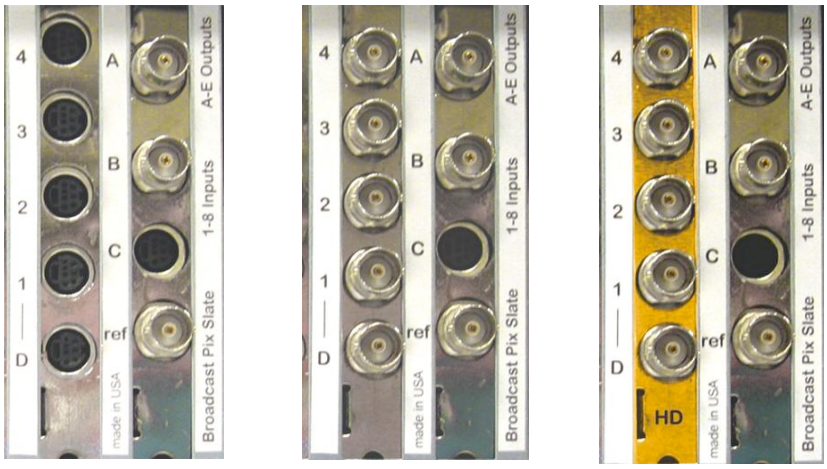


1.2.3 I/O Configurations

All Slate switchers have a switcher output board on the right, which does the processing and contains video outputs and a (analog) reference input. There are 2 slots for I/O boards, of which the center is standard and the left board is optional. Either I/O board may be Serial Digital Interface (SDI), Analog or High Definition-SDI (HD-SDI). SDI and HD-SDI connections are BNCs. Analog connections accept S-Video (Y/C) connections or Composite and Component (YUV) using breakout cables to BNCs. Sources can be synchronous and /or asynchronous, to support a wide range of inputs from broadcast cameras to consumer DVD players.

3 Standard Configurations

a (analog) d (SD digital) h (high-def & SD digital)



Optional Second I/O Board

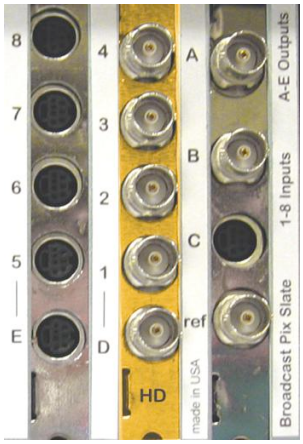
aa dd da

NOTE: It is not recommended to have long cable runs over 100 meters (300 feet), as signal quality will be degraded. For longer runs, it is necessary to install video amplifiers/reclockers to boost the signal.

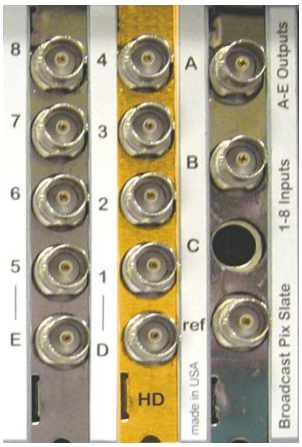
1.2.3 I/O Configurations Continued

Optional Second I/O Board using HD

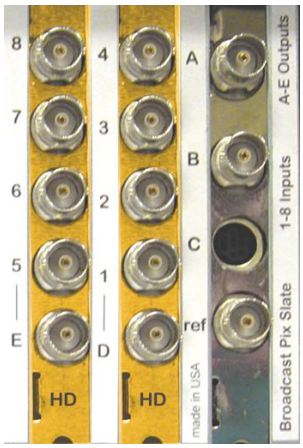
ha



hd



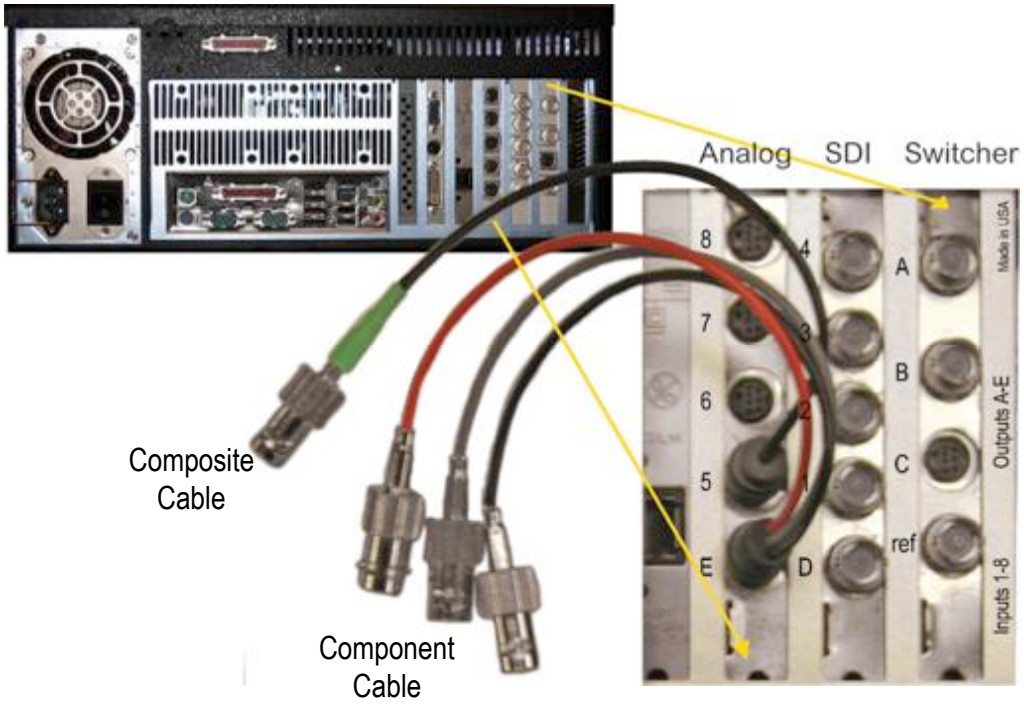
hh



Each of the 9 I/O configurations shown above is available on the Slate 100 and Slate 1000. The Slate 2100 must always have at least one SDI I/O board to connect to the iBoB and so it has 3 configurations available. The iBoB does not support HD video, although a HD I/O card can be used in the third I/O slot.

1.2.4 Analog I/O

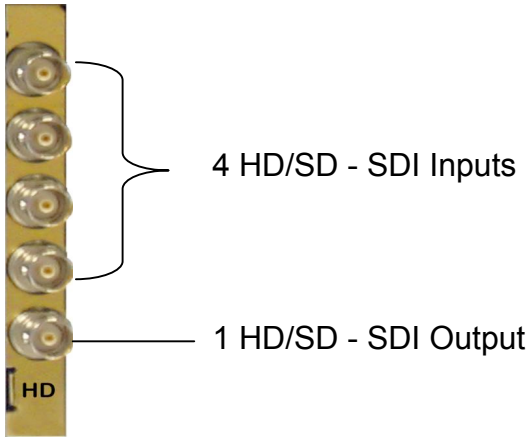
The Analog video I/O connectors on the Slate board set are 7-pin S connectors which can accept S-Video cables directly, and Composite and Component signals via BNC breakout cables provided by Broadcast Pix. Composite cables are included with all Slate switcher models for each analog input and output. Three component/composite break out cables are included with the Slate 100 and Slate 1000 models, and one composite cable with the Slate 2100 model. Additional component cables are available as an option.



NOTE: for Technical specifications of the Pin-out of the analog I/O connector, see Appendix A.6

1.2.5 Optional HD I/O

The High Definition I/O connectors on the Slate board set are BNC connectors. All inputs and outputs can either be HD-SDI or SD-SDI for standard definition. The bottom connector is a HD output and the remaining 4 connections are HD inputs. The Slate system supports high definition video in:
1080i/60/59.94, 720p/60/59.94, 1080i/50, 720p/50, 487i/59.94 and 576i/50 modes and processes HD video at 480p/59.94(NTSC) or 576p/50(PAL). It uses a process called EDTV, Enhanced Definition Television, which has twice the data rate of traditional SDI switchers and supports the standards:
SMPTE 296M, SMPTE 274M, ITU-R BT601-5, SMPTE 259M and SMPTE 292M.
The Slate HD boards down-convert the signal coming in and then up converts the signal going out. The system can also down-convert going out for standard definition on any of the other Slate outputs while outputting a HD signal on the HD output card.



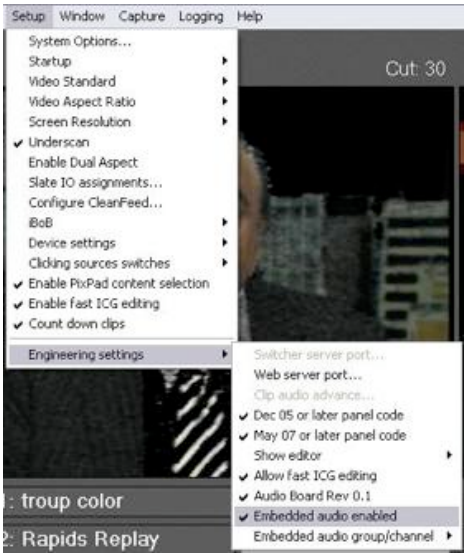
1.2.6 Optional DVI-I I/O

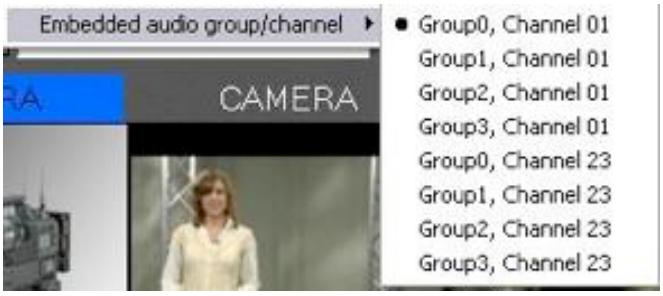
The Slate video switcher is primarily used for broadcast television applications, although the system can be used in virtually any production scenario. As an option each Slate switcher can support up to two DVI-I computer inputs and up to two DVI-I outputs (VGA adaptors are included to convert the signal as well). This is ideal for corporate, faith or event productions where a computer source is needed, for example to run a PowerPoint slideshow. Although it is possible to use a S-Video input or a scan converter to bring in computer signals with a standard configuration, the DVI-I option gives the highest quality computer signal. DVI-I Digital can support VGA to UXGA resolutions with pixel clocks up to 165 MHz and DVI-I Analog can support RGB or YPrPb which supports HDTV modes up to 1080p and graphic resolutions to UXGA (1600x1200 at 60 Hz).
The DVI-I option is included with the HD I/O card and uses one input and one output from the HD card. If two DVI-I ports are needed, then two HD I/O cards are necessary.

1.2.7 Audio I/O on the Slate 100 and 1000

A clip store is included on the Slate 100 and Slate 1000. The clip store can be used with or without audio, and can either have embedded audio in/out through the Slate SD-SDI in/outputs or analog stereo audio through the 25 pin dim to XLR break out cable, which plugs into the back of the workstation. Both the inputs and the outputs of the breakout cable use a balanced line level signal.

To use embedded audio, in BPswitcher go to **Setup, Engineering Settings** and select **Embedded audio enabled**, as shown below. You may also change the group/channel in which the audio is embedded in the SDI stream in this same menu.





To use analog audio, follow the same procedure as stated above and deselect **Embedded audio enabled.**

The embedded audio input would come from a Digital Video Tape Deck or other device that has embedded audio on the SDI video stream. All the SD-SDI Slate inputs can accept embedded audio.

The analog audio input would come from a Video Tape Deck, DVD player, or any other source. It is recommended to go though an audio mixer to adjust audio record levels. For more information about recording to the Clip Store, see section 6.0.

The embedded audio output for each clip store can be assigned to any SD-SDI Slate output, see section 1.2.8 to setup the embedded audio output. The audio would run to a Digital Video Tape Recorder or an audio de-embedder.

The analog output would come out of the breakout cable, one channel is for the Clip Store 1 and the other is for the optional Clip Store 2, as labeled on the breakout cable.

NOTE: for Technical specifications of the pin-out of the analog I/O connector, see Appendix A.7

1.2.8 Slate I/O Assignments

Inputs 1-8 on the Slate boards are general purpose video inputs that may be used for cameras, VTRs, and feeds from servers and other external video devices. They are set up using the following steps.

To Assign the Slate I/O:

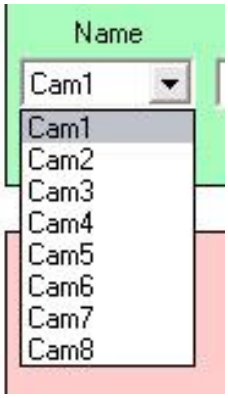
1. Start the Broadcast Pix application by clicking on it's **switcher** icon on the desktop, which will bring up the large Broadcast Pix switcher window, which contains a blank Multi-View, and various drop down menus at the top.

2. On the **Setup** drop down menu, select **Slate I/O assignments**
   (Note: a show must be loaded to see this. Go to **File, Load Show**).

   And the Slate IO Assignments window will appear as shown below.

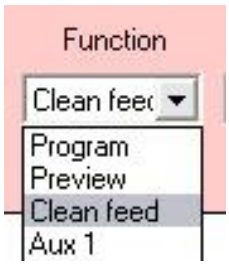
3. For each analog input select the format that is connected, either **Compos**, **YUV** for component or **S** for S-Video / Y/C**.** On digital input cards, this option will be grayed out.

4. For each input select the name, which will determine what name appears on the PixButton, Multi-View and other identifiers for this source. In this example, Input 1 is being named Cam1, for Camera 1.
To create your own custom name, select **Custom** from the drop down menu.



5. For each analog output select the format that is connected, either **Compos** for composite**, YUV** for component or **S** for S-Video / Y/C**.** On digital output cards, this option will be grayed out.

6. For each output, assign it to Program, Preview, Clean Feed (clean of any/all keys selectable from the Setup Menu), or an auxiliary output. For example, in the illustration Clean Feed is being selected.



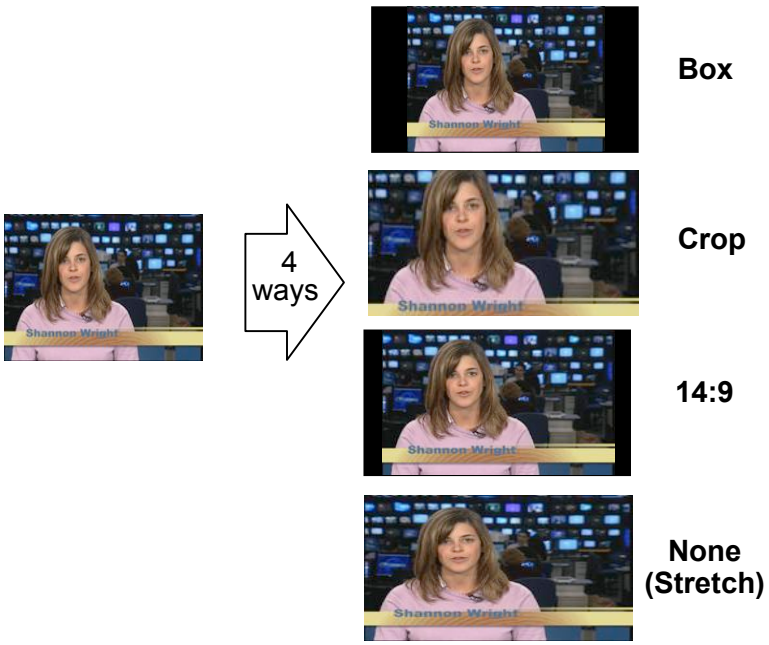
7. For each digital SD-SDI output select which clip store audio will be outputted on the embedded SDI stream. Either **None, Clip 1** or **Clip 2.** To activate embedded audio see section 1.2.7.

8. Click on **Save** in the lower right corner of the Slate IO Assignments window to save and exit.

1.2.9 AutoAspect Inputs

AutoAspect solves the many challenges of mixing 4:3 and 16:9 content in the same production. It enables 16:9 and 4:3 inputs to be used interchangeably and mixed together in the same live production, while maintaining the native aspect ratio of each element rather than stretching them. Each input can be set to one of 4 aspect treatments, three of which preserve the native aspect ratio. Conventional switchers can only stretch video when crossing aspect ratios, causing people to look too wide or too thin.

This Illustration below shows the four ways that a 4:3 source can be treated in a 16:9 production. If **None** is selected, then the image is stretched to fill the space, as is done on other switchers, and the result makes the person look too wide. If one of the other three treatments are selected than the original aspect ratio of the source is preserved, and the person does not look too wide.

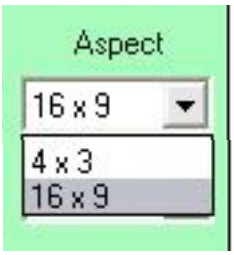


To set the aspect treatment of a source:

1. In the Broadcast Pix Switcher, launch a show from the Multi-View. (**File, Load show)**

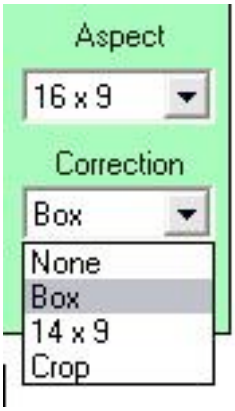
2. On the **Setup** drop down window, shown in the illustration at the right, click on **Slate IO assignments**, and the Slate IO assignments window will open as shown on the next page.

3. Use the **Aspect** drop down menu to indicate the native aspect ratio of the source.



4. Use the **Correction** drop down menu to select the desired treatment that will be applied when using this source in a production of the other size than its native size.

5. Press **Apply** to see your changes applied to the sources temporarily, if satisfied click **Save** to close the Slate IO Assignments window.



6. You may also set these settings from the control panel with Source Controls, see section 4.6.

NOTE: When the show is set to the same aspect ratio as the source's native aspect ratio, then no aspect treatment will be performed. When the show is set to the opposite aspect ratio, than the selected treatment will be applied. See section 1.9.3 for setting the show's aspect ratio. To enable DualAspect see section 1.9.5

NOTE: When a source is treated, it will appear with that treatment on all video outputs, and on the program and preview windows of the Multi-View.

1.2.10 Optional Tally on the Slate 100 and 1000

The tally option is a stand-alone box that plugs into the workstation via a USB connection. It has convenient screw terminals and secure hold-downs. The illustration below shows the screw terminal pin names and location for the I/O signals.

All 8 external sources plugged into the Slate I/O cards can be tallied. The wiring diagram is shown below.

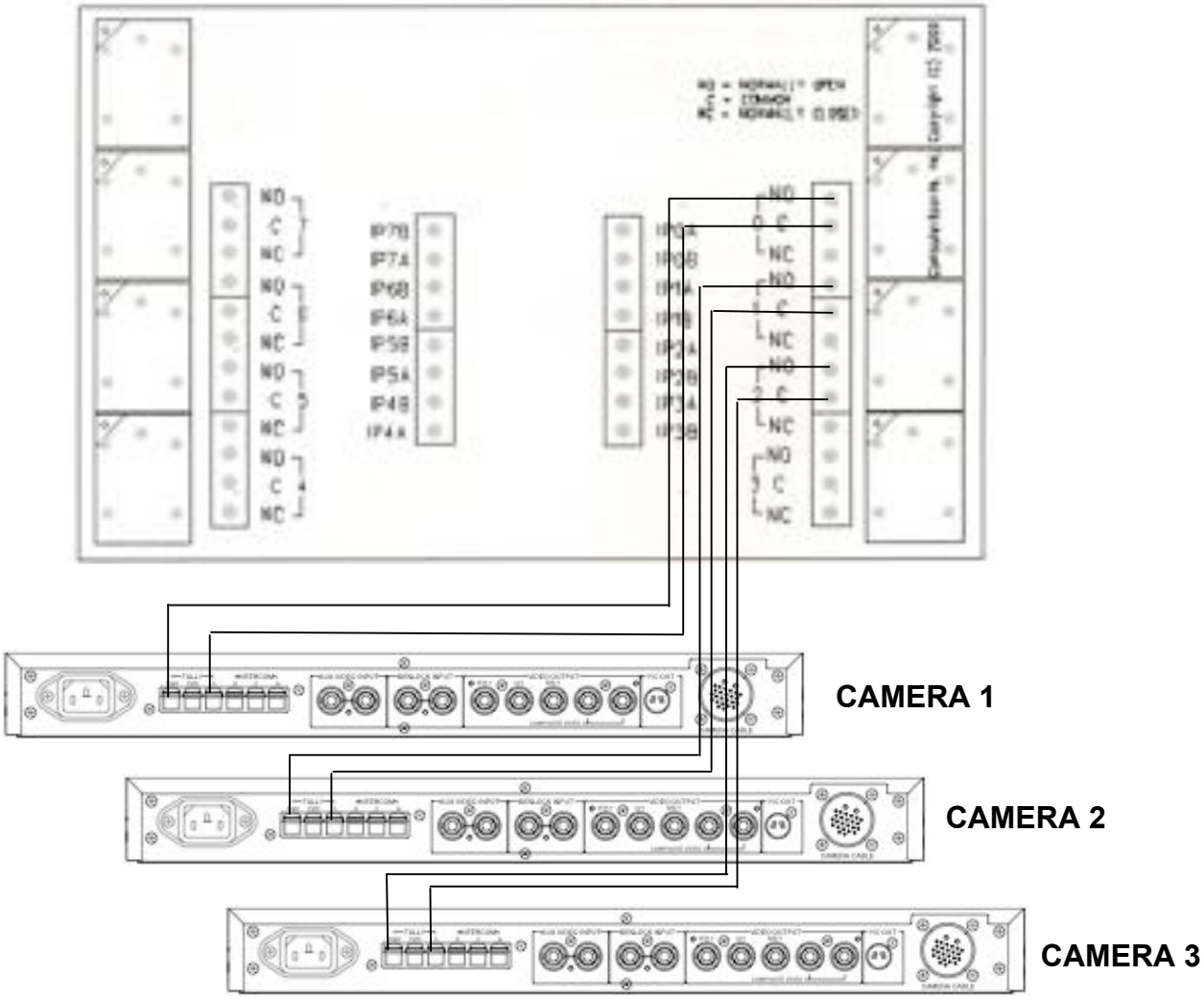
Standard I/O	Input 1 on the Slate card corresponds to '0' on Tally Box
	Input 2 on the Slate card corresponds to '1' on Tally Box
	Input 3 on the Slate card corresponds to '2' on Tally Box
	Input 4 on the Slate card corresponds to '3' on Tally Box
Optional I/O	Input 5 on the Slate card corresponds to '4' on Tally Box
	Input 6 on the Slate card corresponds to '5' on Tally Box
	Input 7 on the Slate card corresponds to '6' on Tally Box
	Input 8 on the Slate card corresponds to '7' on Tally Box

Pin	*Signal Name*	*Pin*	*Signal Name*
IP0A	Input 0 terminal A	IP4A	Input 4 terminal A
IP0B	Input 0 terminal B	IP4B	Input 4 terminal B
IP1A	Input 1 terminal A	IP5A	Input 5 terminal A
IP1B	Input 1 terminal B	IP5B	Input 5 terminal B
IP2A	Input 2 terminal A	IP6A	Input 6 terminal A
IP2B	Input 2 terminal B	IP6B	Input 6 terminal B
IP3A	Input 3 terminal A	IP7A	Input 7 terminal A
IP3B	Input 3 terminal B	IP7B	Input 7 terminal B
0-NO	Relay 0 Normally Open contact	4-NO	Relay 4 Normally Open contact
0-C	Relay 0 Common contact	4-C	Relay 4 Common contact
0-NC	Relay 0 Normally Closed contact	4-NC	Relay 4 Normally Closed contact
1-NO	Relay 1 Normally Open contact	5-NO	Relay 5 Normally Open contact
1-C	Relay 1 Common contact	5-C	Relay 5 Common contact
1-NC	Relay 1 Normally Closed contact	5-NC	Relay 5 Normally Closed contact
2-NO	Relay 2 Normally Open contact	6-NO	Relay 6 Normally Open contact
2-C	Relay 2 Common contact	6-C	Relay 6 Common contact
2-NC	Relay 2 Normally Closed contact	6-NC	Relay 6 Normally Closed contact
3-NO	Relay 3 Normally Open contact	7-NO	Relay 7 Normally Open contact
3-C	Relay 3 Common contact	7-C	Relay 7 Common contact
3-NC	Relay 3 Normally Closed contact	7-NC	Relay 7 Normally Closed contact

NOTE: The 'Inputs Contacts' (IP A/B) are for General Purpose Input (GPI). The 'Relay Contacts' are for Tally. 'NO' for Normally Open, 'C' for Common or Ground, 'NC' for Normally Closed.

Installing the Optional Tally Box:

Run a set of wires from each terminal in the Tally Box to each terminal on your camera/camera unit, one to Program and the other to the Ground, as shown below. 'NO' (Normally Open) goes to Program and 'C" (Common) goes to Ground. 'NC' (Normally Closed) is not used.
The Tally box uses one of the computers USB ports, and needs to plugged into an electrical socket with the supplied power supply.



** Camera Control Unit will vary depending on manufacturer.*

NOTE: The Tally Box does not supply any voltage for tally. Voltage must be provided by your Camera Control Units or other source. The Tally Box only opens and closes the tally circuit. Check your Camera Control Unit's user manual for more information.

1.3 Broadcast Pix Slate 2100

1.3.1 Slate 2100 System Contents

The Broadcast Pix Slate 2100 is comprised of the following components.

Broadcast Pix Software,
Showing the Multi-View

(VGA monitor
not included)

Software:

BPSwitcher V6

Inscriber TitleMotion Pro
Character Generator

Microsoft Windows XP

Workstation with Slate boards

Broadcast Pix
Control panel

Intelligent Break-out-Box (iBoB)

Broadcast Pix
SoftPanel

Keyboard, Mouse and 10/100 Ethernet
switch and network and serial cables

Broadcast Pix 2100 System Includes:

Hardware

Broadcast Pix physical control panel (Control panel)
Broadcast Pix Break-out-Box (iBoB)
Workstation, with Slate board and I/O board
Ethernet 10/100 switch (For private control network)
Straight Network Cables
9-Pin Male to Female Serial Cable
Inscriber USB Dongle, installed internally in the workstation at the factory
Keyboard and Mouse

Software

Broadcast Pix Software V6
Inscriber TitleMotion Pro Character Generator
Microsoft Windows XP and .NET

Requirements

To install a system you will also need:

At least one VGA monitor (at least 1280x1024 resolution)
Sync Generator or other source of house black burst (analog reference)

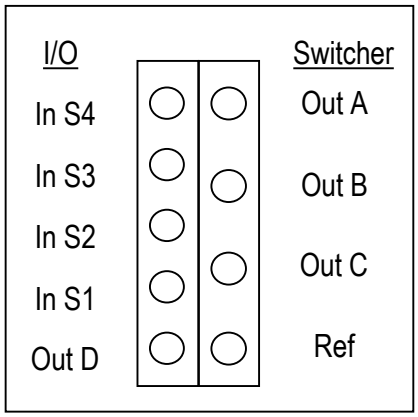
1.3.2 Wiring the Slate 2100

1. Attach to house black. Run one wire from house sync to the Break-out-Box's (iBoB) reference input, and then run a second wire from the iBoB's reference output to the "Ref" input on the Slate, as shown on the wiring diagram on the next page.

2. Attach six Video Cables between the Slate and the iBoB:

On Switcher board (right)	On iBoB
A	From A
B	From B

On I/O board (left)	On iBoB
1	To S1
2	To S2
3	To S3
4	To S4



3. Attach the following video cables on the iBoB:

Preview	to the preview monitor (using any preview format)
Program (using any format)	to the program monitor and other program destinations
Input 1-8	to cameras, VTRs and other sources.

4. Attach network cables from the private Ethernet 10/100 switch included, as follows:

From Hub	
Any port	To workstation NIC 1
Any port	To control panel - either network connector
Any port	To iBoB - either network connector

The workstation has two network connections, the above NIC1 and a 1GB NIC2. NIC2 connects the system to a "house" network, which is convenient for moving content into the system.
NOTE: do not move data through the private network hub, as it will affect system performance.

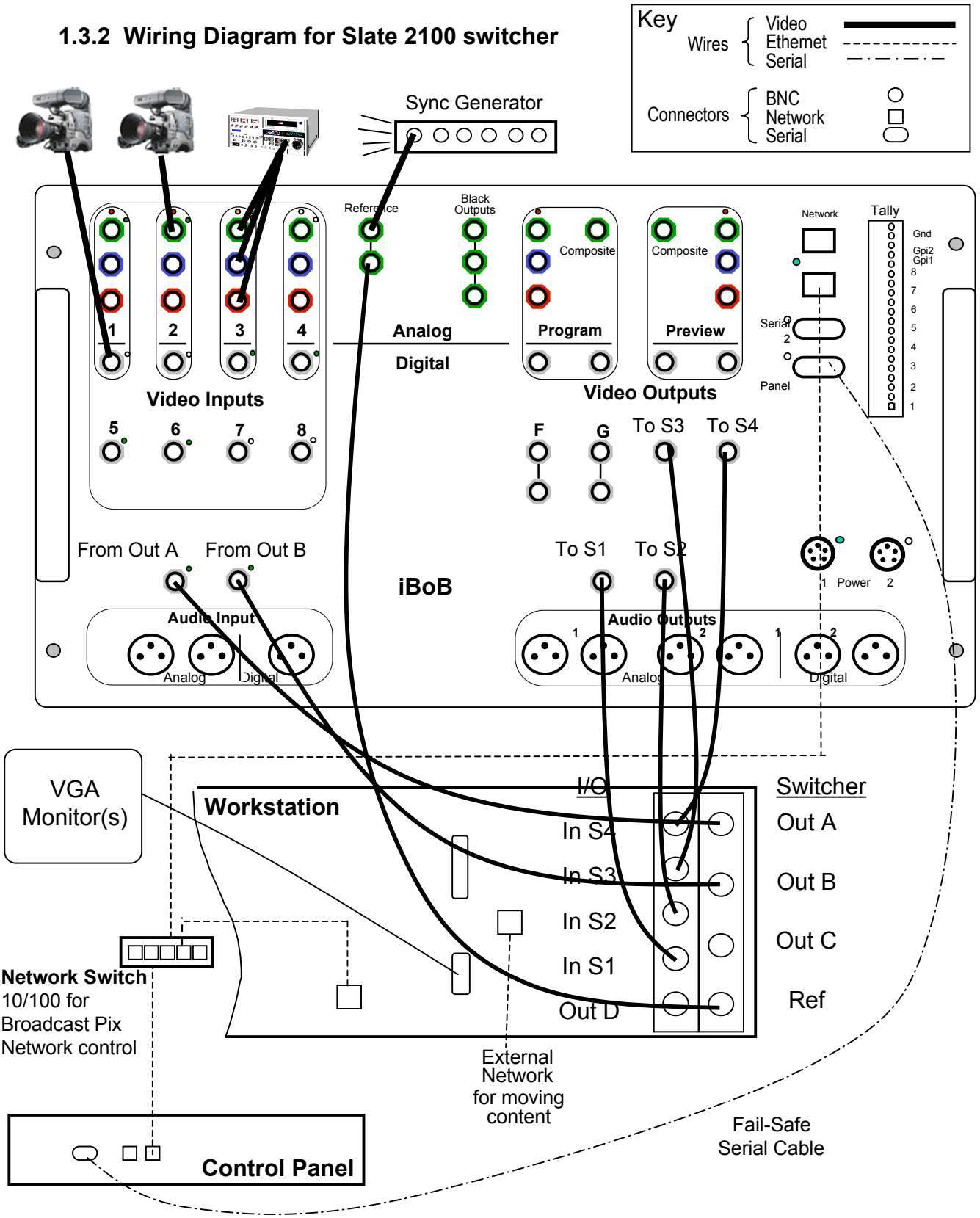
5. Attach the RS-232 serial cable from the control panel to the iBoB serial input labeled 'Panel'.

6. Attach the Workstation's VGA monitor(s), mouse and keyboard.

7. Plug in power to the workstation, iBoB and control panel.

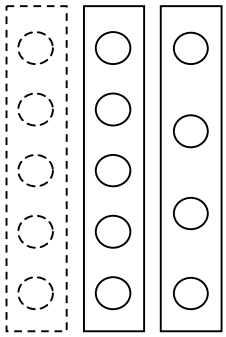
8. See Section 1.3.5 to set the inputs on the iBoB for format, name and timing.

1.3.2 Wiring Diagram for Slate 2100 switcher



Wiring the Optional 9-12 inputs on a Slate 2100

The Slate 2100 can be fitted with an optional second Slate I/O board, which expands the number for video inputs and outputs. This second board fits in the left slot as shown below and can be ordered in either SD-SDI, HD-SDI or Analog. Live inputs 1-8 attach to the iBoB and inputs 9-12 attached directly to this left Slate card. All the inputs and outputs of the iBoB are Standard Definition (SD) only, however you can mix High Definition (HD) content with the iBoB using the optional HD I/O card in the second card slot.

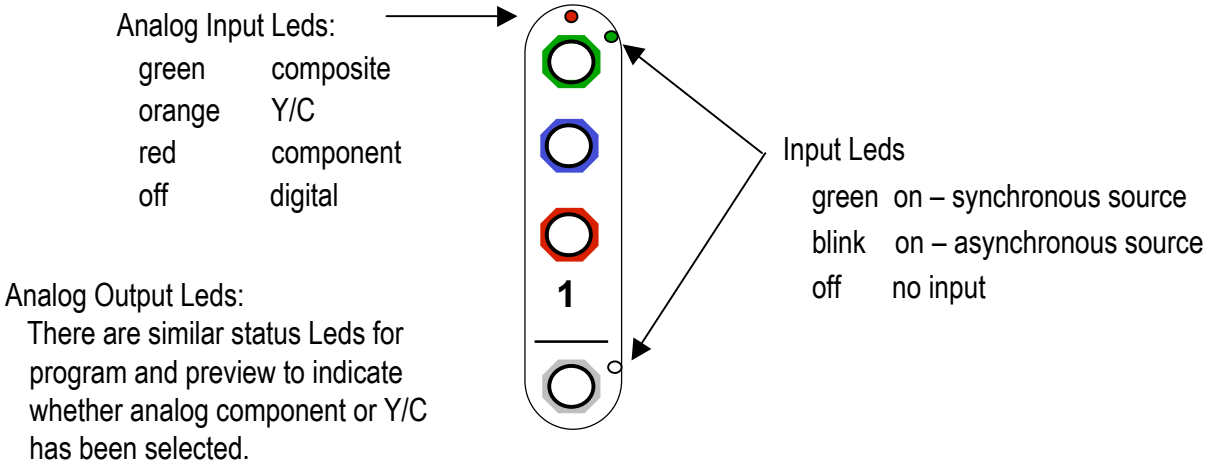


Slate Board Set
(left I/O board is optional)

left I/O	center I/O	Right Switcher
In 12	In S4	Out A
In 11	In S3	Out B
In 10	In S2	
In 9	In S1	Out C
Out E	Out D	Ref

Input/Output Status Lights on iBoB

The iBoB has status indicator leds (Light Emitting Diodes) that show at all times the status of each input, including its presence, timing and format. Inputs 1-4 also have an led that indicates what analog format the input is set to, and there are similar indicators on the outputs that can be either component or composite.



1.3.3 Audio I/O Wiring for the Slate 2100

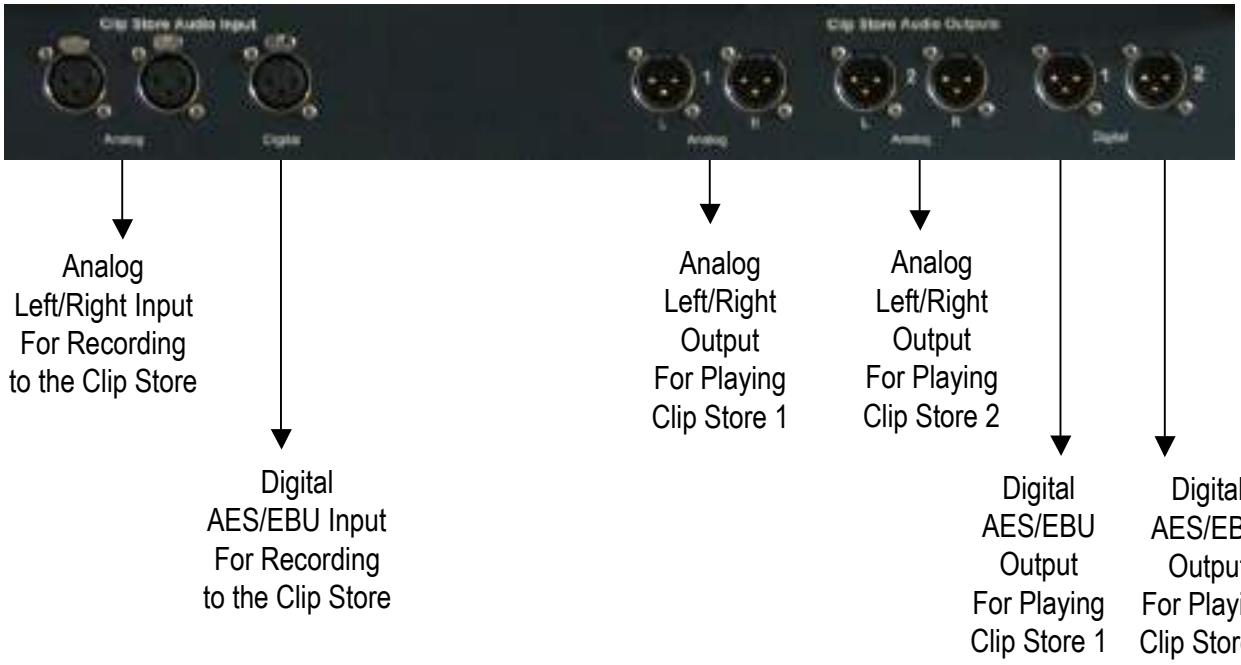
There are 2 channels of Clip Store on a Slate 2100 and both may be used with or without audio. On a 2100 audio is handled in 3 standards: either embedded on a SDI stream, Analog Stereo (Left/Right) or Digital (AES/EBU) with the provided XLR connections on the Break-out-Box.

The iBoB acts as an audio de-embedder, in order for any audio to work on the iBoB, you must enable embedded audio, see section 1.2.7. The iBoB audio inputs and outputs have a balanced line level signal.

Audio in to the iBoB, for recording/ingesting to the Clip Store, can be either one of the 3 standards. Either embedded on 1 of the 8 SDI inputs, Analog Stereo or Digital. For more information about recording to the Clip Store, see section 6.0.1.

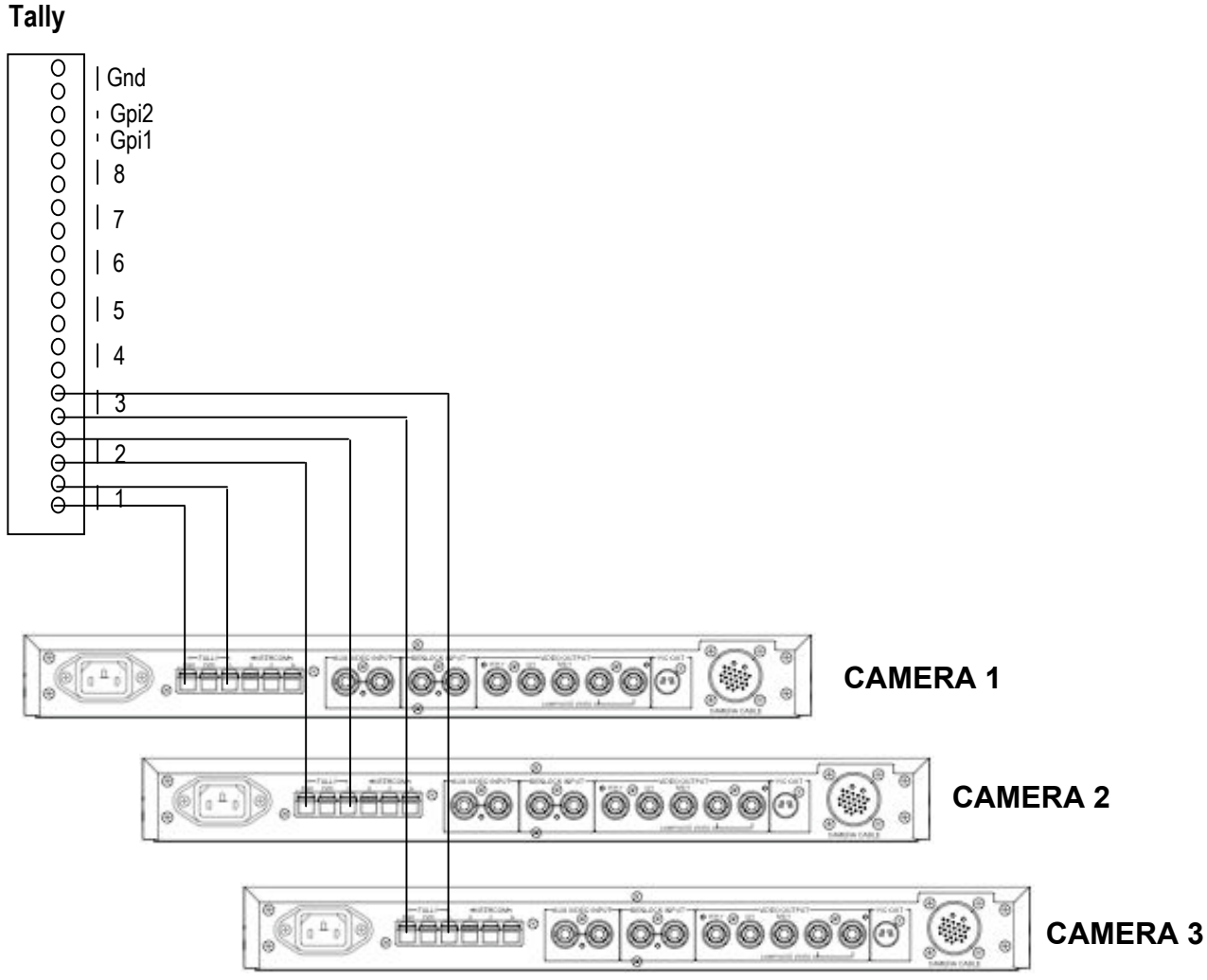
Audio is outputted from the iBoB in the same 3 standards and all 3 are always active. Embedded on the Preview and Program SDI outputs, Analog Stereo and Digital AES/EBU with the provided XLR connections.

iBoB Audio



1.3.4 iBoB Tally Wiring

The iBoB includes a tally connector to use with external tally lights like on a studio camera. The first 8 connectors correspond to Inputs 1 – 8 on the iBoB. Run a set of wires from each connector on the iBoB to each terminal on the camera/camera unit, one to Program and the other to the Ground, as shown below. The 'Gnd'(Ground) terminal on the iBoB is used only for the 'Gpi' (General Purpose Input) terminals.
If you have an optional input card and would like to tally sources 9-12, you may use the optional tally box used on a Slate 100/1000. Input 9-12 correspond to terminals 4-7 on the tally box. See section 1.2.10 for more information.



** Camera Control Unit will vary depending on manufacturer.*

NOTE: The iBoB does not supply any voltage for tally. Voltage must be provided by your Camera Control Units or other source. The iBoB only opens and closes the tally circuit. Refer your Camera Control Unit's user manual for more information.

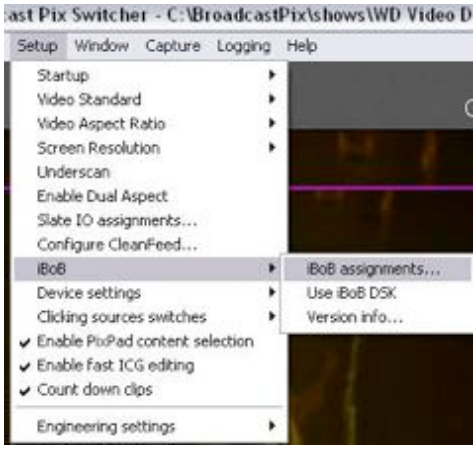
1.3.5 iBoB Assignments

Inputs 1-8 on the iBoB are general purpose video inputs that may be used for cameras, VTRs, and feeds from servers and other external video devices. They are set up using the following steps, or from the Control panel as described in section 1.3.6.

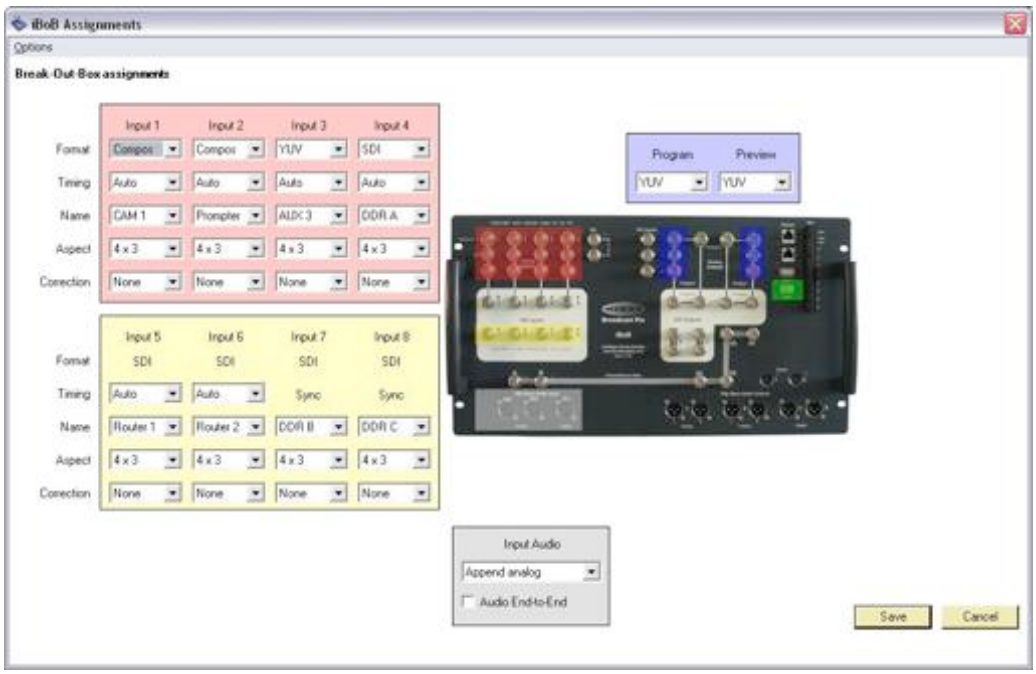
To Assign the iBoB I/O:

1. Start the Broadcast Pix application by clicking on the **switcher** icon on the desktop, which will bring up the large Broadcast Pix switcher window, which contains a blank Multi-View and various drop down menus at the top.

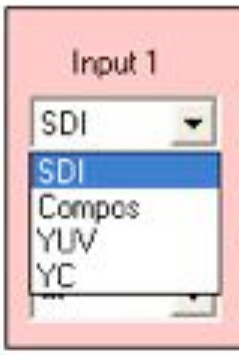
2. On the **Setup** drop down menu, select **iBoB**, and **iBoB assignments**, as shown below…



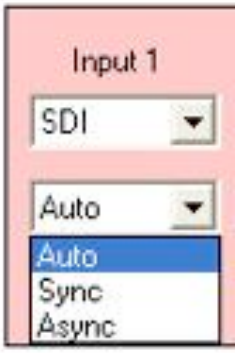
…and the iBoB Assignments window will appear as shown below.



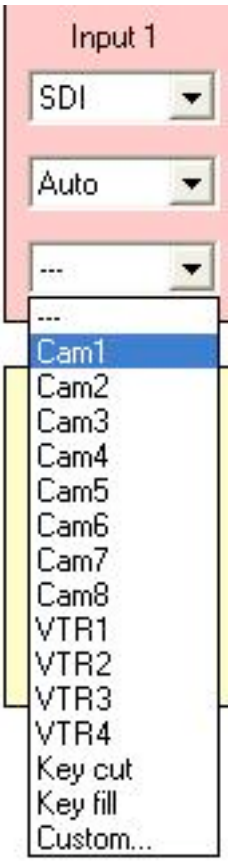
3. For inputs 1 through 4, check off its format, either Digital, Analog Composite, Y/C or Component, by using the drop down menu and selecting **SDI, Compos, Y/C** or **YUV**. (Inputs 5-8 are always digital). For example, in the illustration shown below, input 1 is being set to SDI.



4. For each of inputs 1 through 6, select the timing you want, either **Sync** (for timed sources), **Async** (for untimed sources such as a DVD player) or **Auto**. If you select auto the system will automatically detect whether the source is sync or Async and adapt to it.
Inputs 7 and 8 are always **Sync** and need timed sources plugged into them.
In the above illustration, input 1 is being set to Auto.

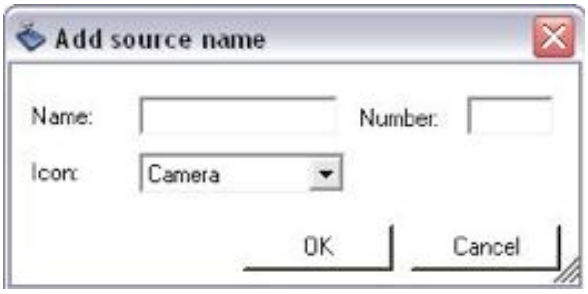


5. For each input select the name, which will determine what name appears on the PixButton, Multi-View and other identifiers for this source. In this example, Input 1 is being named Cam1, for Camera 1.
To create your own custom name, select **Custom** from the drop down menu. See next page for more information.

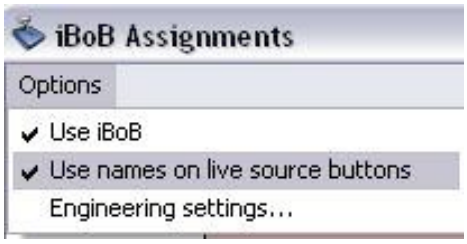


6. If you are combining 16:9 and 4: 3 sources, then you may treat the Aspect ratio of each input. Use the iBoB Assignments window to treat sources 1-8, use the Slate IO assignments window to treat optional sources 9-12, see section 1.2.9.
You may also treat the sources with the Source Controls from the control panel, see section 4.6

7. If you would like to customize the names of the inputs that will appear on the PixButtons, then select **Custom** in the above menu and the Add source name window will appear as shown below. Enter the **Name** desired, **Number** (if no number is desired then enter '0') and select an icon using the **Icon** drop down menu, either Camera, VTR or None, and then check **OK.**



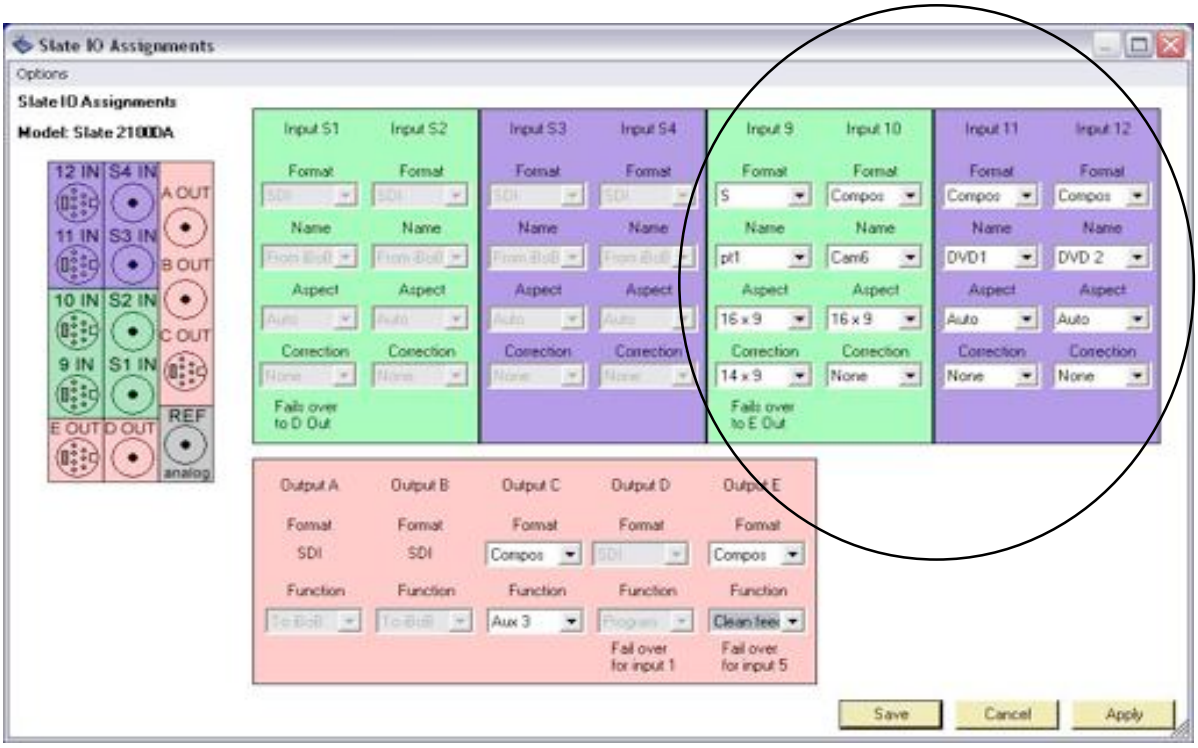
If you want this name to appear on the PixButtons, you will need to select the **Options** menu and select **Use name on live source buttons** as shown below. If this option is not selected, then only the input number and icon will appear for all source PixButtons.



8. One of the analog Preview and Program outputs is selectable between S-Video (Y/C) and Component (YUV). (The other three preview outputs are have fixed formats: one is always analog Composite, and the other two are always SDI). For the selectable analog input, use the drop down window to select the desired format. For example, in the illustration below **YUV** is being selected for Program.

9. Click on **Save** in the lower right corner of the iBoB assignments to apply your changes.

10. If you have optional inputs 9 -12, then you can set up these extra inputs by opening the **Slate IO Assignments** window from the **Setup** drop down menu, as shown here.



NOTE: If you wish to set up iBoB DSK, see sections 4.8.

1.3.6 Setting up the iBoB from the Control Panel

As an alternative, the iBoB can have its analog formats chosen and cascaded router inputs chosen from the control panel. This is handy if the workstation is not on or unavailable for some reason.

1. While the control panel is offline, select the **Fail Safe** PixButton in the Wildcard Device Select section.

   NOTE: To force the panel to go offline, select the **Shift** button, followed by the **MEM** button. This will activate the first Wildcard Device button to read **GO OFF LINE.**

2. Select the **Set Up Video** button in the PixPad. This will bring up a new set of PixButtons, one for each input.

3. Press the **Set Src Video** button for sources 1-4 until the desired source is selected. Either Digital, Cmpos, Y/C or YUV.

4. You may also select the video output for Preview and Program as shown below. Either Y/C or YUV.

NOTE: In this same setup you may also assign the Key Cut/Fill for the iBoB DSK, as well which 2 sources are being using for a cascaded router setup.

1.4 Run a Show

Shows are run from the Switcher application. A show can be set to auto-load when Switcher is turned on. When the system comes from the factory the sample show is set to auto-load, and so it will open.

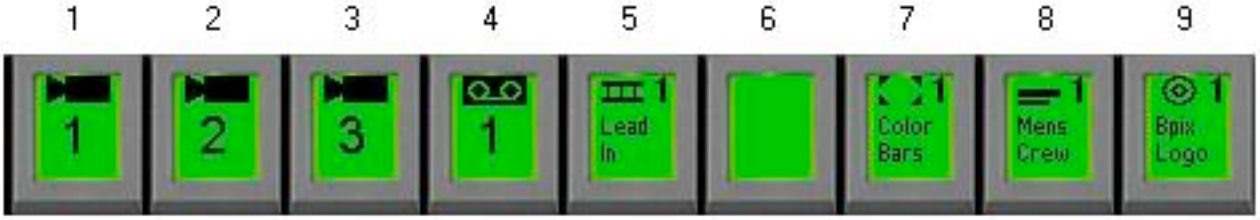
To run a Show (when the Sample Show is set to auto-load):

1. Click on the **Broadcast Pix Switcher** application on the desktop, and it will open and display the Multi-View for the sample show, and then the Control panel will fill in its PixButtons for the sample show.

1.5 The Sample Show

The sample show ships from the factory and has just a little content to get you started. (You can delete any content at any time, see section 3.7.)

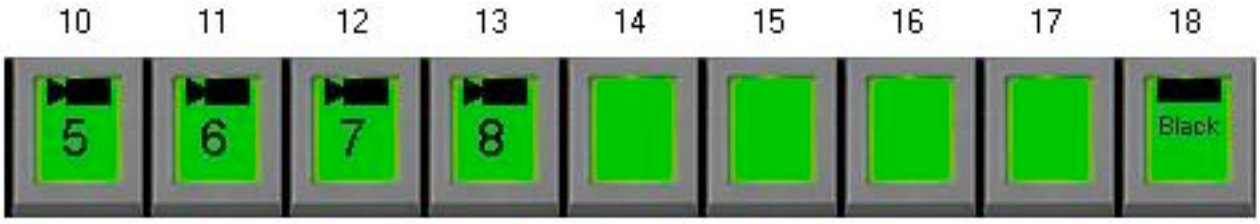
The sample show comes up with the direct sources shown below. The first four are the first four sources attached to the iBoB. The next 5 are internal sources.



The content in the sample show's direct inputs is:

Source	Live Inputs	
1	Whatever is attached to input 1*	
2	Whatever is attached to input 2*	
3	Whatever is attached to input 3*	
4	Whatever is attached to input 4*	
	Inputs from inside the Workstation	
5.	Clip Store 1	Lead in clip, rowing clip, Juice background, chromakey clip, spinning logo
6.	Clip Store 2	Optional
7.	Still Store 1	Color Bars, picture, dual box background, weather map, program slate ICG
8.	CG 1	Title, ICG Title, Crawl
9.	Logo 1	Logo, Over the Shoulder

The "Shifted" Indirect inputs enable you to check the rest of the iBoB's inputs:

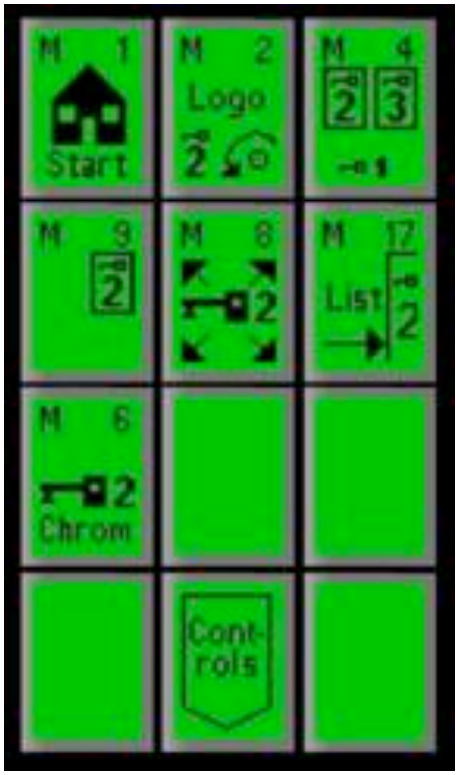


Source	Live Inputs
10.	Whatever is attached to input 5*
11.	Whatever is attached to input 6*
12.	Whatever is attached to input 7*
13.	Whatever is attached to input 8*

* Input number is on Slate boards for Slate 100 and 1000, and on iBoB for Slate 2100

1.5.1 Testing the System

If you are running the system or the first time the sample show can help you insure everything is operational. All of the sources should be reachable on the video monitors from the panel's program and preview rows. The still store provides color bars, and some of the memories help quickly check out the keyers, CG and other parts.



1.5.2 The Sample Show Memories

Some memories are provided in the sample show, as shown at the right. Unlike the clips and graphics in the sample show that are disposable, you may enjoy using memories like these in you productions.

Mem	Name	Contents
1	Start or House	A known, neutral point which: - Assigns: Key 1=CG, Key 2=Still, Key 3=Logo - Loads the first content element of each device - Resets the keyers, no: dve, ckey
2.	Spinning Logo	Animated clip plays on Key 3 (repositioned)
3.	Dual Box	Two DVE boxes: key 2=cam1, key 3=clip on a still background, with a crawling title.
4.	Key 2 squeeze up	when Key 2 is on full screen (see mem 5), it squeezes whatever is in Key up to the right
5.	Key 2 Full Screen	Key 2 is full screen. It must be manually filled and put on air
6.	Reveal Slate with Key 2	when Key 2 is on full screen (see mem 5), it squeezes it over to reveal a program slate.
7.	Chroma Key on Key 2	Clip of person in front of a green screen chromakeyed with Key 2 over a map still

You can customize any of these, or add your own, see section 4.10

1.6 Troubleshooting

The Multi-View always displays a status light in the top left corner. If it is green all is OK, if not (Red) select the Status Tab in the lower left corner of the Multi-View and the following detailed status window will appear.

Lights during normal operation

Status on Slate 100 and Slate 1000

Status of	Light	Indicates
Slate genlock	Green	Slate board has reference
	Orange	In process of locking to reference
	Red	Slate has no reference
Panel ready	Green	Control panel is ready and has joined show
	-	It is not
Status message	Computer message on what is currently happening	

Status on Slate 2100

Lights during normal operation

Status of	Light	Indicates
Slate genlock	Green	Slate board has reference
	Orange	In process of locking to reference
	Red	Slate has no reference
Hard panel ready	Green	Control panel is ready
	-	It is not
Failsafe ready	Green	Serial communication from panel to iBoB is OK
	-	It is not
iBoB Ready	Green	Ethernet communication to iBoB is OK
	-	It is not
Failsafe controlling iBoB	-	In normal mode (control via Ethernet)
	Green	In Fail-safe mode (control via Serial)
Status message	Computer message on what is currently happening	
Reset Video	Will reset the sources/video on iBoB **Caution:** will cause all video to flash on program/air	

1.7 Input Timing & Asynchronous Sources

Reference

The Broadcast Pix Switcher requires a reference input from an analog sync generator.

Format

Internally, the Broadcast Pix uses the SDI format (SMPTE 259M), and all systems provide SD-SDI digital video I/O with embedded audio.

Slate also has analog video I/O conversion for composite, Y/C and component, and its clip store has embedded audio as well as embedding and de-embedding.

Synchronous Inputs

All systems work well with all video inputs that accept a ref input for gen-lock, including broadcast cameras, tape recorders, servers, etc. The delay through the Slate system on synchronous sources is 1 frame, even if the image is inside a DVE box (picture in picture).

Asynchronous Inputs

With a precaution, the system will also accept and self time asynchronous sources, such as a DVD player. The precaution is to preview each asynchronous source before taking it to air, which gives the systems the few frames it needs to settle the source down. Unlike synchronous sources, these should not be taken directly to air, because the settling is then visible on program. All direct Slate live Inputs accept asynchronous inputs, and on the inputs coming from the iBoB, inputs 1 through 6 accept asynchronous sources. The delay through the Slate system on asynchronous sources is 2 frames.

1.8 Changing What Show is Running

In BPswitcher, click on **File** and a drop down menu will appear, then select **Load Show,** and a window will appear with the various saved shows. Select the one you want.

1.9 Settings

1.9.1 Changing the Startup Show

When the system ships from the factory it is set to load the sample show. You can turn off auto-loading, or after you create more shows, you can change the system to auto-load a different show. If you turn off auto-loading, then Broadcast Pix Switcher will still open, but you need to then Load Show as described above.

To change which show auto-loads:

1. In BPswitcher, click on **Setup** and a drop down window will appear, then select **Startup** and then **Show…** as shown to the right. Click it to open the **Startup show preferences** window, as shown below.

2. Select the **show** you want to auto-load, such as House show in this example.

3. Click **OK.**

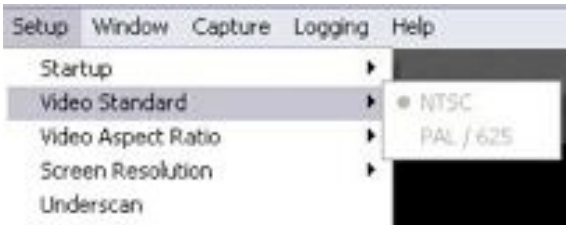
To have no show auto-load on startup:

1. Uncheck the box labeled **Load Show at Startup.**

2. Click **OK.**

1.9.2 Selecting between NTSC/525 and PAL/625 Formats

Systems generally come from the factory set up for the local standard of the country, such as NTSC in most of the Americas and PAL/625 in Europe and other countries. NTSC uses a pixel size of 720x486, with 525 lines and 30 (29.97) frames/sec. PAL uses a pixel size of 720x576, with 625 lines and 25 frames/sec. To change between NTSC to PAL:



1. Make sure a show is not running, then in BPswitcher, click on the **Setup** menu
2. From the drop down window select **Video Standard**
3. From the next drop down window select **NTSC or PAL/625**
4. If the iBoB is powered select **Reset Video** in the Status Tab on the Multi-View, or unplug the iBoB and plug it in again.

1.9.3 Selecting 4:3 or 16:9 Aspect Ratios

To select Aspect Ratio:

1. **Close** the show, and under **Setup**, move your cursor to **Video Aspect Ratio**, as shown, and it will indicate what is selected. This example is 4:3
2. To change to 16:9, click on **16:9**, and the “dot” will move to 16:9.

1.9.4 Selecting Monitor Resolution

To select Monitor Size for the main Multi-View:

1. On the **Setup** menu, click on **Screen Resolution**
2. Select **1280x1024 or 1680x1050**
   For more customization of the Multi-View, see section 2.5

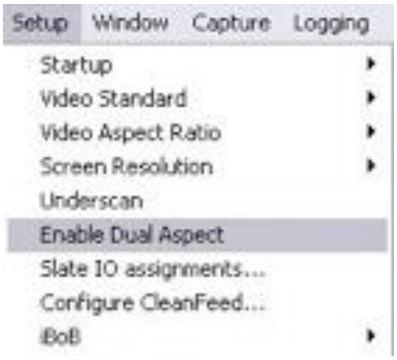
NOTE: You may change any of the above settings at any time. For any changes to take effect, you must quit and restart the application.

1.9.5 Enabling DualAspect

As described in section 1.9.3 Broadcast Pix Slate switchers come standard with selectable 4:3 or 16:9 video aspect ratios. As an option, Broadcast Pix can output both 4:3 and 16:9 video aspects simultaneously. This is ideal when you need to simulcast to two different mediums, i.e. TV broadcast and Internet or Image Magnification (IMAG) and TV broadcast.
DualAspect uses an Auxiliary output which mirrors the program output and uses the opposite aspect ratio of the current show. You can select your Aux output in the **Slate IO Assignments** menu, see section 1.2.8. Be sure to add an aspect treatment to each input as well to each content element to ensure proper output.

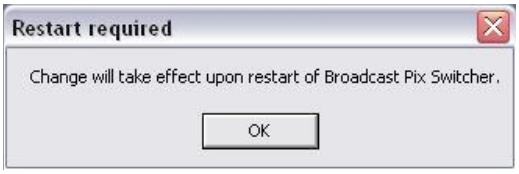
To Enable DualAspect

1. In BPswitcher select **Setup** and from the drop down menu and select **Enable DualAspect.**



2. A warning will appear, which will disable Keys 4-6. Click on **Yes.**

3. A second warning will appear, which will ask you to Restart the application. Click on **OK.**



4. Under the **File** menu select **Close Show**, then **Quit.**

5. Double-Click the **Broadcast Pix Switcher** icon on the desktop to restart the application. Once the Multi-View appears, you now have DualAspect enabled.

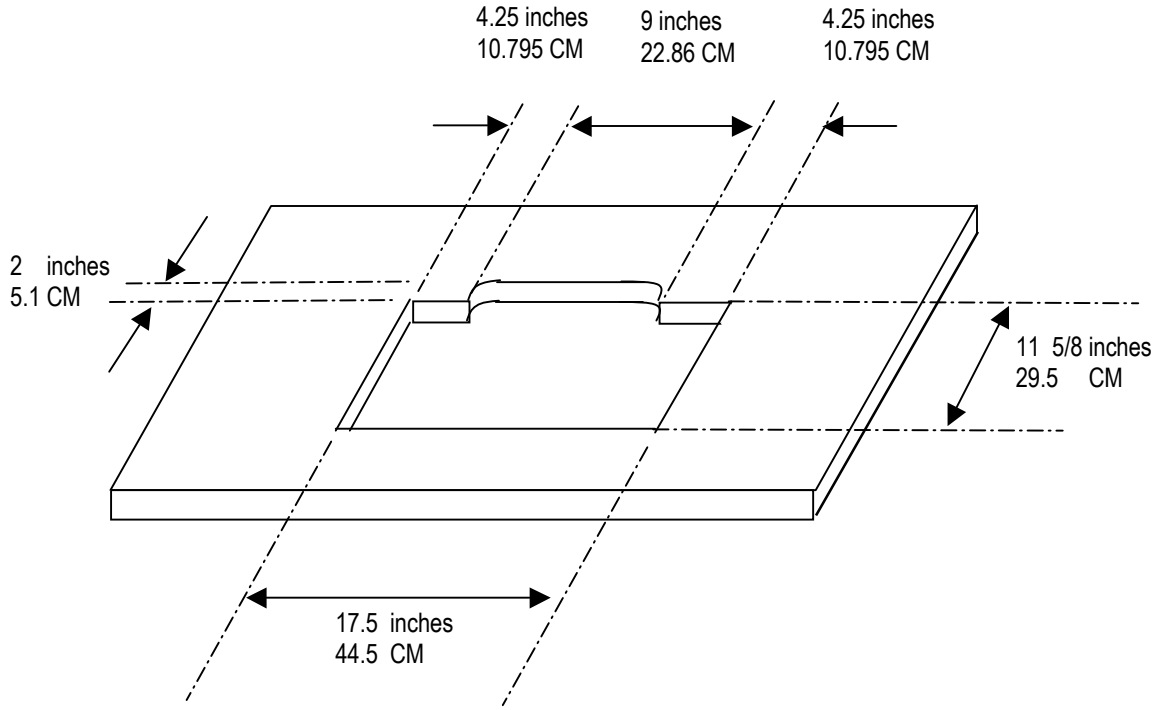
NOTE: DualAspect mode requires Keys 4-6 as well as PowerAux options to operate. DualAspect also does not use any mix effects on the output, even if a transition occurs on program the result on the Aux output will be a cut.

1.10 Control Panel Sleep Mode

If the Control panel is connected to a workstation but left alone for over one half hour, it will automatically fall into a sleep mode. When this happens all lights are extinguished, but the panel continues to stay connected to the workstation. To wake it up just press any button. This first “wake-up” button press will be ignored. All subsequent button pushes are processed as usual.
To disable the sleep mode see section A.5 towards the end of this manual.

1.11 Console Installation

Most Broadcast Pix systems are used on a tabletop, which is a better viewing angle in most light conditions, especially to view the PixButtons. The system may also be recessed into a hole cut out of the table top or console. If a cut out installation is desired, then the following dimensions should be used to cut the hole in the console top. The panel may fit into existing cut-outs for older equipment, as it is the same width as a GVG100 control panel.



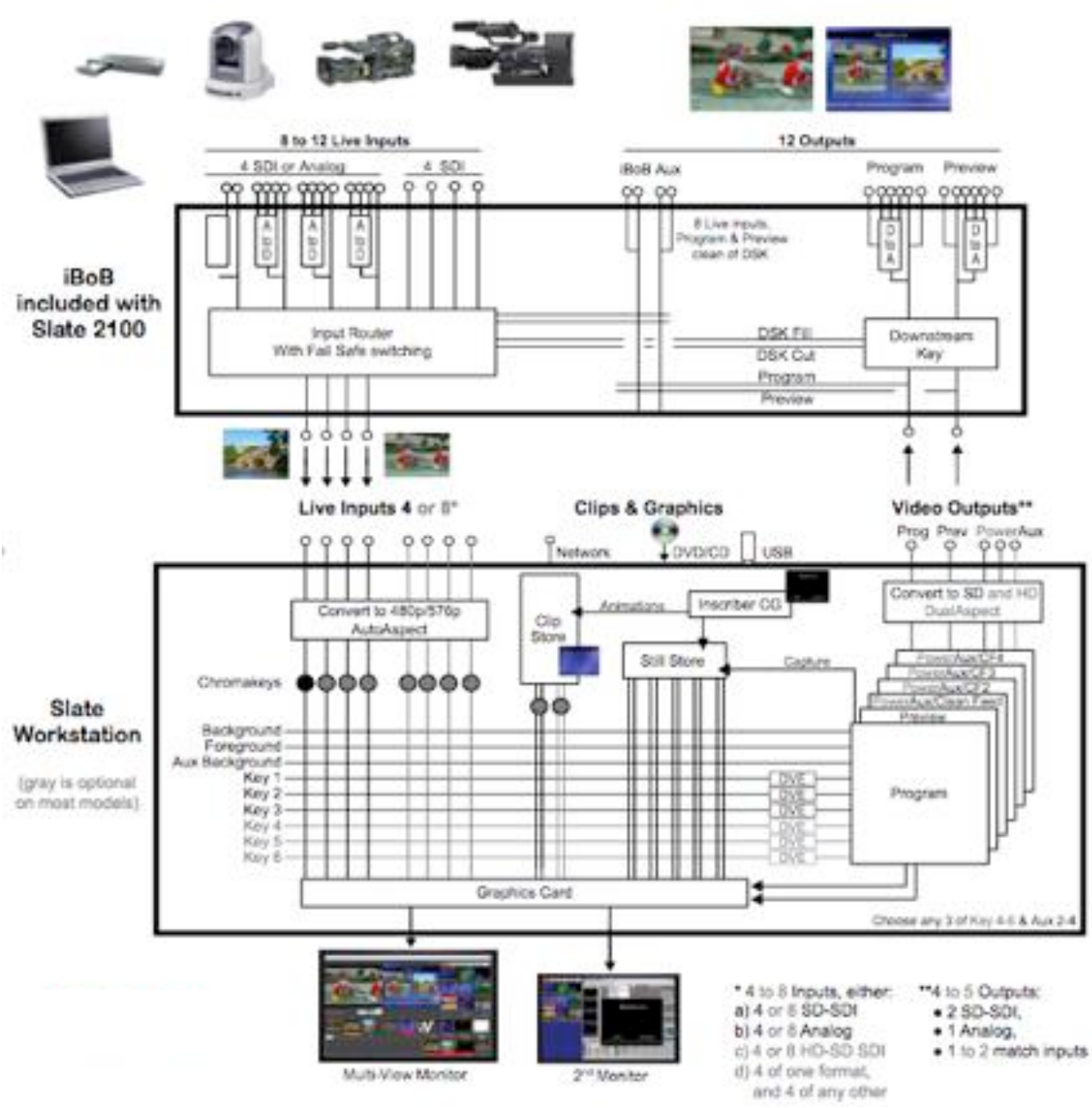
Dimensions for Console Installation

Section 2:
Broadcast Pix Concepts

2.1 Broadcast Pix Features

Integrated Broadcast Studio	Contains an entire control room of devices; including switcher, clip store, character generator, still stores, logos, DVEs, monitoring, optional camera and external DDR control.
Pristine SDI Video	Create superb digital video (SMPTE 259M) with 3 keyers (upgradeable to 6 keyers), background video, and a second background when transitioning. Slate 2100 adds iBoB DSK.
Versatile Control Panel	Slate 1000 and 2100 feature a fast-action control panel enables rapid control of all tools, sources, and keys
Confidence of On-button Content	Execute with confidence, as not only the device type, but the actual content element is displayed on PixButtons for every source and keyer, as well as on the Multi-View.
Personal Studio	Now one person can create engaging live video that used to require a team of operators
Grow to a Team Studio	For complex production add more panels, as described in the team section
Fail-Safe On-Air	Multiple redundancies always keep your show on-air. Redundant routing, panels and power.

2.1.1 Video Flow Diagram



As shown in the above diagram, the Slate Mix Effects system has up to a 9 x 22 matrix, plus there is a 10th video layer downstream. The 9 layers of video in the Mix Effects system are program (background video), preview (foreground video), and six layers of key. These 9 layers can be filled with sources from both the 8 live video inputs from the Slate I/O boards and the 14 computer video inputs (7 video and key pairs) from the workstation's disk drives.

The Slate 2100 extends the video flow matrix with an intelligent break-out-box (iBoB) which adds a fail-safe matrix that expands inputs by 4, and adds a seventh keyer downstream.

2.2 PixButtons for Executing with Confidence

Much of the versatility of the Broadcast Pix system is due to its unique picture buttons, called PixButtons. Each has a small computer VGA display built into the button, which has a resolution of 36x24 pixels.

PixButtons show Information at a Glance

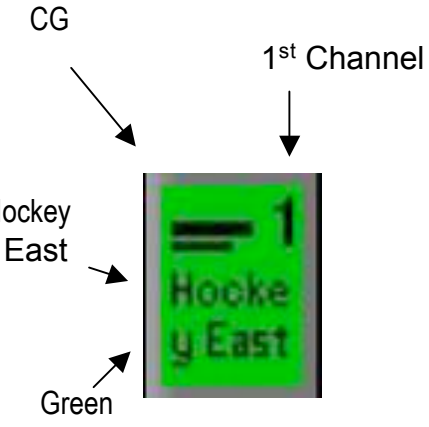
All PixButtons on the Broadcast Pix panel show information at a glance. They all contain a device icon in their upper portion which shows which device is currently active in that PixButton. In the illustration below, the Character Generator (CG) is active, as shown by the CG icon. See Section 2.3 for all icons.

The remainder of the PixButton generally shows what individual content element is now active on this device in this PixButton. In the illustration shown below the content number and name is shown, which are the file name and number of this content element when it was imported into the show memory system. As an alternative, some PixButtons use a picture to convey content, as shown on the next page.

What Device is in Here?
What channel of that device?

What is the Name of the currently selected Content in the device?

Tally - Is this On-Air, Selected, or Off?



PixButton

Red	On-Air
Orange	Off-Air, but selected:
Green	Off-Air and not selected:

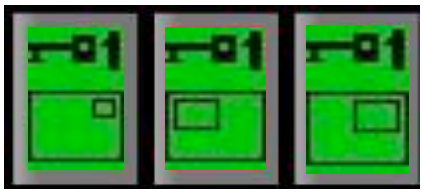
NOTE: If preferred, the PixButtons can be set to display the number of the content element and one line of its name, instead of two lines of its name, see 3.4.

PixButtons Streamline Selection

PixButtons streamline the selection of content for all content, such as the uses illustrated below, plus titles, logos, stills, PowerPoint or a Keyer.

Clips

Effects



DVE boxes

Five Kinds of PixButtons

A total of 28 PixButtons are used in 5 different areas of the Broadcast Pix control panel:

1. 12 in the PixPad — To select content within a device, and for modifiers
2. 9 Sources — To see what is on each source, and selection without preview
3. 3 Direct Key Buttons — To see what is in each keyer, and to take it on-air or off
4. 3 Assignable Devices — To see what is in each assignable device, and to select it.
5. 1 Effects PixButton — To see the active effect, and to select the effects controls

2.3 Devices

The Broadcast Pix panel can control a studio of devices. Each device performs one function. In a traditional live television studio, many of these devices are in a separate box with its own operator. The Broadcast Pix panel provides flexible control over a wide range of devices, by using the device controls. When a device is selected the entire bank of device controls are assigned to that device, including a Joystick, 3 knobs, motion buttons, and a PixPad of 12 PixButtons. The list of supported devices will grow over time, check for new devices at www.broadcastpix.com.

Each device has a unique icon that appears on the top of the PixButtons. Broadcast Pix Software Version 6 supports the following devices, and use the following icons:

Switcher:
Select both external and internal input with a control panel with 9 direct access input, and 18 with shift. Classic program/preview layout. Illustration shows Camera 1. Other icons are used for VTR and other sources.

Clip Store: (2 channels)
Instant access to clips. Import/ingest and play-out. Use motion controls and time codes. Plays uncompressed with embedded audio as well as compressed clips (QuickTime/DV/MPEG). The Clip Store also plays animated graphics with or without an alpha channel.

Inscriber TitleMotion Pro Character Generator: (2 Channels)
Create broadcast quality graphics with shadows, bevels, transparencies, splines, logos and many more. Create your own look, or use easy templates. Add motion with rolls, crawls and 3D animations.

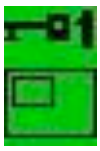
Still Store: (2 Channels)
Have thousands of photos and graphics at your fingertips. Recall with a press of a button from the corresponding library shown on the monitor.
Import many file types: .bmp, .jpg, .tga, .tiff, .gif and .png.

Logo Store:
Brand your production with a logo in its own key layer. Logo store makes it easy to apply or remove a logo at any time. Import any logo, or create your own with Inscriber logo creation tools.

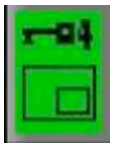
Camera Control:
Optional camera control of Hitachi and Sony cameras with Pan & Tilt heads. Including preset positions, tilt, pan, zoom, focus, iris and CCU controls.

List of Devices, Continued

Effects:
Over 150 transitions. DVE transitions include push-offs and squeezes. Wipe transitions include horizontal, circles, stars, clocks, and many more.

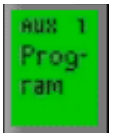


Keys 1-3:
Handle fine quality edging with 14-bit quality. Each Key supports a standard DVE Box (Picture-in-Picture), sizing, cropping, border controls and Chromakeys.



Keys 4-6:
Keys 4-6 are an option that handle fine quality edging with 14-bit quality. Each Key supports a DVE Box (Picture-in-Picture), sizing, cropping, border controls or optional Chromakeys.

iBoB DSK:
External keyer in the Break-out-Box for a legacy character generator or other external key sources.



Aux:
The Aux 1 and Aux 2 buttons act as Auxiliary outputs, and can be assigned to program, preview or another internal/external source. Also used when DualAspect option is enabled.

PowerAux:
An option to enable Keys 1-6 to be keyed onto Aux outputs.

StudioMemory (MEM):
Is a device that enables snapshot recalls of the entire panel, or portions thereof, with either just the set-up, or the set-up and source assignments.

Capture:
Enables the capture of a still image of program or preview.

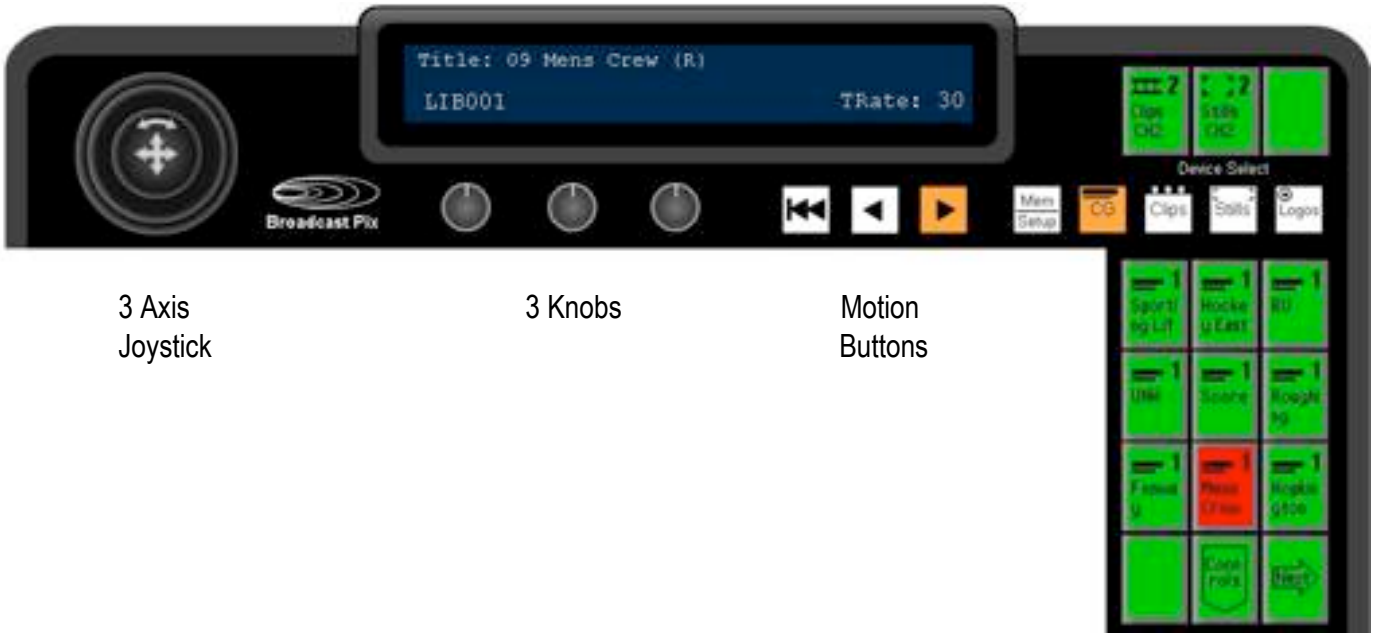
External Video Server Control (DDR):
An option which enables an external video server to be controlled from the panel through a serial connection using the VDCP Protocol, having its clip name appear in the PixPad.

2.4 Device Controls

Device Controls is the portion of the control panel that can be assigned to whichever device you wish to control. The upper half of the panel comprises the device controls, as shown in the illustration below. The upper half of the VGA monitor complements the device controls, as shown on the next page. The remainder of the panel and monitor is comprised of the fixed controls, which are described in the section 2.5.

The device controls are comprised of the Joystick, 3 knobs, 3 motion buttons, a group of 12 PixButtons called the PixPad, and a display, as shown below. When any device is selected, all of these the controls are dedicated to it.

Device Controls portion of Panel

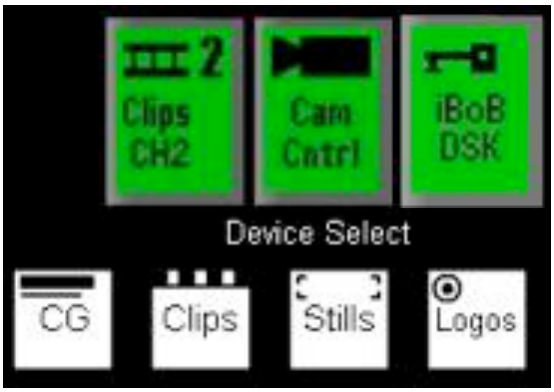


2.4.1 Assigning the Device Controls

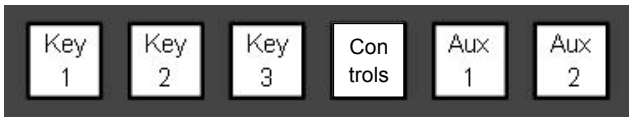
The entire bank of device controls can be assigned by any of 15 buttons:

7 Content Devices

The device controls are assigned to most devices by using the four permanent device selection buttons for CG, Clips, Stills and Logos or three assignable “wildcard” device selection buttons above them, as illustrated below. In this illustration the wildcard buttons are assigned to a second channel of clip store, camera control, and iBoB DSK. For specifics on how to assign devices to these 3 wildcard buttons, see section 3.9.3.



6 Destination Buttons:
-Three Key buttons
-One Source Controls button
-Two Aux buttons

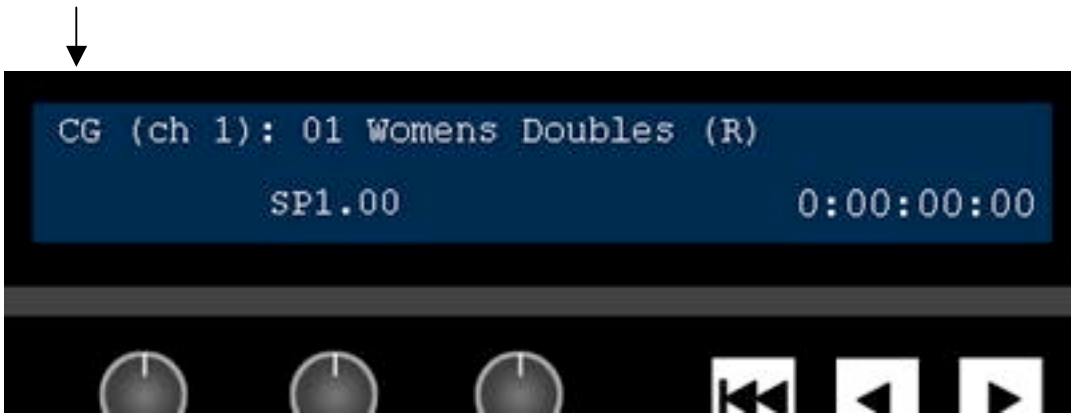


1 Effects PixButton

1 Memory/Setup Button

Which Device is Assigned?

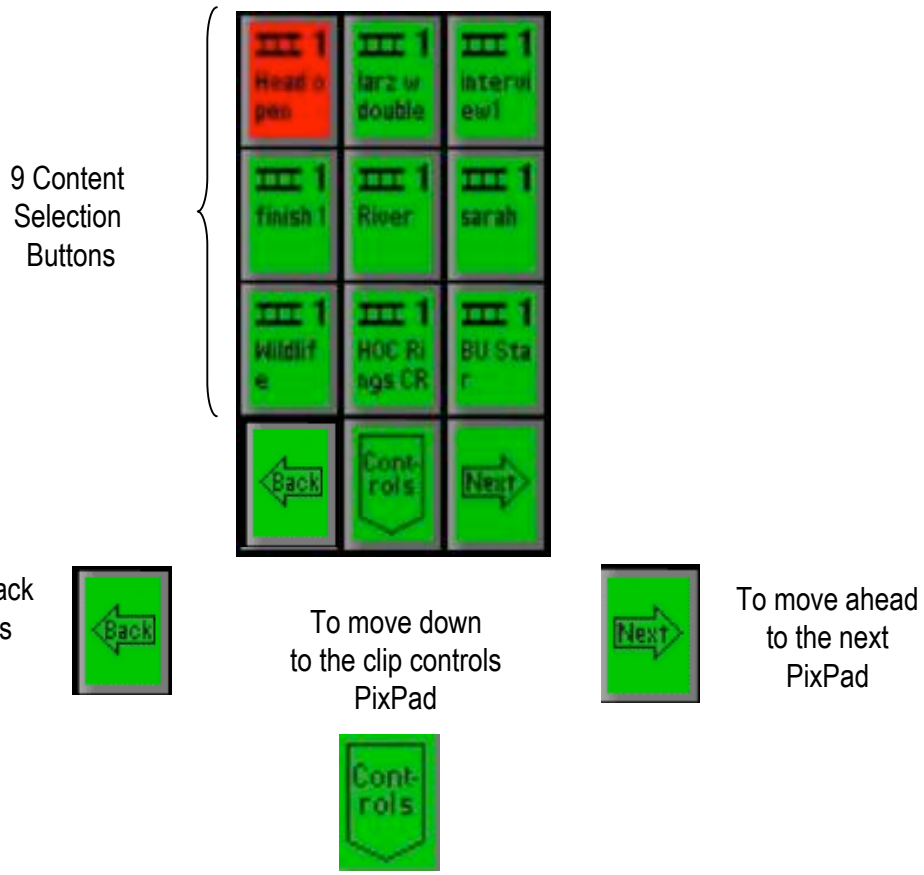
At <u>all</u> times you can tell what device is assigned to the Device Controls, by looking at the upper left corner of the display, in this illustration is it the first channel of CG.



2.4.2 PixPad Navigation

The PixPad is a versatile part of the Device Controls that is used to access content and many fast action controls. It has several navigation aids that streamline its use.

For most PixPads (other than control modifiers), the top nine PixButtons are to select which content element, effect or memory you want. The bottom three PixButtons are to move to the next PixPad, move back to the previous PixPad in the library, or move down a level to either controls for the device, such as in the clip store shown below, or to the numeric keypad such as in the Still Store.



To quickly jump to the first page of the content in the PixPad, simply select the device button you are using in the Device Control section of the control panel.
When you switch to another device, like CG, and then return, the PixPad will return to the page it was last on.

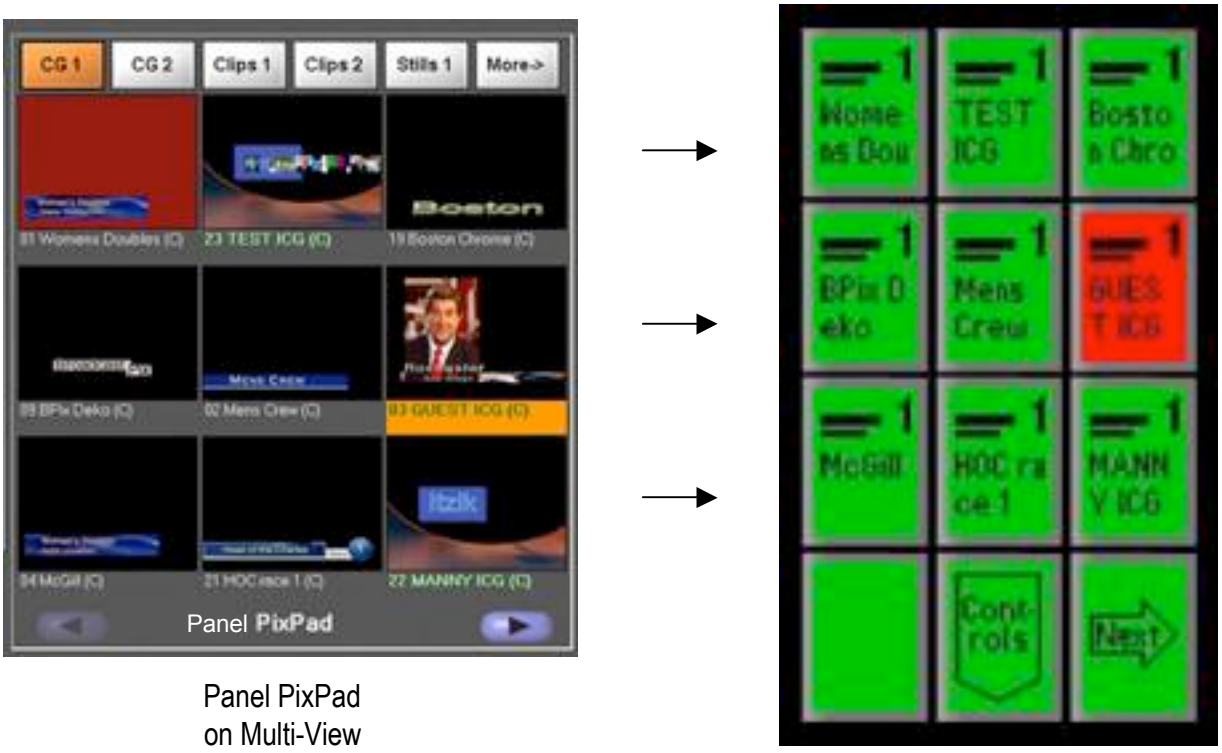
There is also an up button, to move up from control PixPads, to a previous PixPad.

2.4.3 Multi-View PixPad

In the upper right corner of the Multi-View is a PixPad of thumbnails which correspond to the active PixPad on the control panel, called the Panel PixPad. As the panel changes its PixPad to a content device, the Multi-View displays the thumbnails associated with the device. Content devices are Clips, Stills, CG and Logos. In the illustration below, the PixPad is set to CG1.

The thumbnails make it easy to select any content element at the press of a button. When selected, both tally red if on-air, as shown below. If a device has more than 9 content elements, the next page of elements can be reached from the control panel by pressing the [Next] button on the panel PixPad, or by clicking on the buttons in the lower right hand corner of the Multi-View PixPad.

Device: CG1, first page in library



Panel PixPad
on Multi-View

PixPad
on control panel

NOTE: The Panel PixPad will always update with the control panel PixPad, no matter if Panels are locked or unlocked.

2.4.4 PixPad Order Controls

To change the order in which the PixPad tabs appear across the top of the PixPad:

1. On the **Panel** drop down menu select **Reorder PixPad**, and the PixPad order window will appear.

2. Use the up and down arrows to move the highlighted selection to where on the list you want it to appear. Highlight other items and them move them with arrows as for the first item.

3. Click **OK.**

Now the order will appear as you prepared it.

2.4.5 Floating PixPads

In addition to the Panel PixPad in the top right corner of the Multi-View, you can create additional floating PixPads. These can be used on another portion of a large screen, or on dual monitor systems can be opened on a the second monitor where they are helpful as either additional info for a solo operator, or dedicated info for a graphics operator. These Floating PixPads do not change when the control panels changes, and are meant to independent of each other.

To open a Floating PixPad:

1. On the Multi-View click on the word **Panel PixPad** (on the PixPad),
   or,
   In BPswitcher click on **Panel** drop down menu, and click on **New Floating PixPad**.

To change the size of a Floating PixPad:

1. Click on the drop down **menu** on the floating PixPad, and **select the size** you want.

The illustration below shows three sizes: 150%, 100% and 75%

2.5 Multi-View

The Multi-View consists of source thumbnails, larger preview and program monitors, one large PixPad of thumbnails to correspond to the control panel PixPad, keyer thumbnails, a clock as well as tally information The Multi-View is also interactive, so you can switch a show from the Multi-View, as a complement to using a panel, or in place of for simple shows.

2.5.1 Monitor Sizes

The Multi-View supports 2 sizes of computer (VGA) monitors, as shown below, as well as customizable floating windows for any size monitor, see section 2.5.9

Traditional Aspect Ratio Monitor

1280x1024 pixels, for traditional monitors, and almost all touchscreen monitors.

Widescreen Monitors

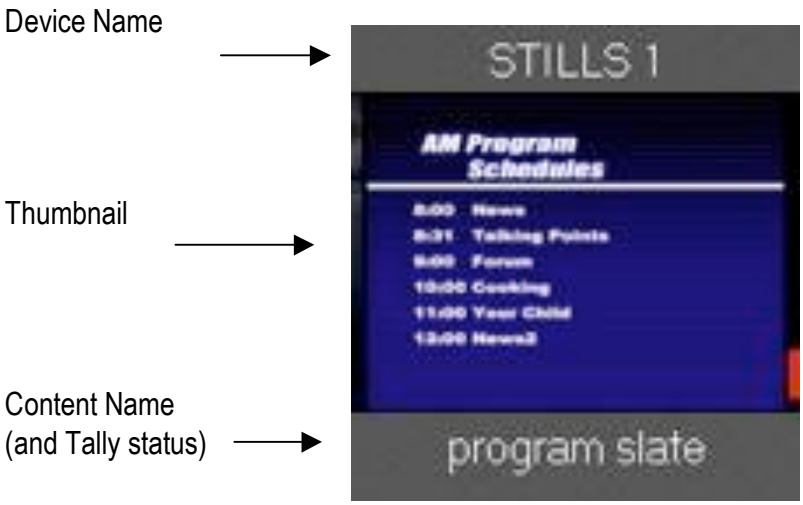
1680x1050 for widescreen monitors

2.5.2 Overview of the Multi-View

2.5.3 Sources on Multi-View

Thumbnails for the first 8 sources are displayed on 1280x1024 monitors as illustrated below. Widescreen 1680x1050 monitors display the first 9 sources across. Thumbnails for external sources show full motion video and thumbnails for internal devices show the assigned content.

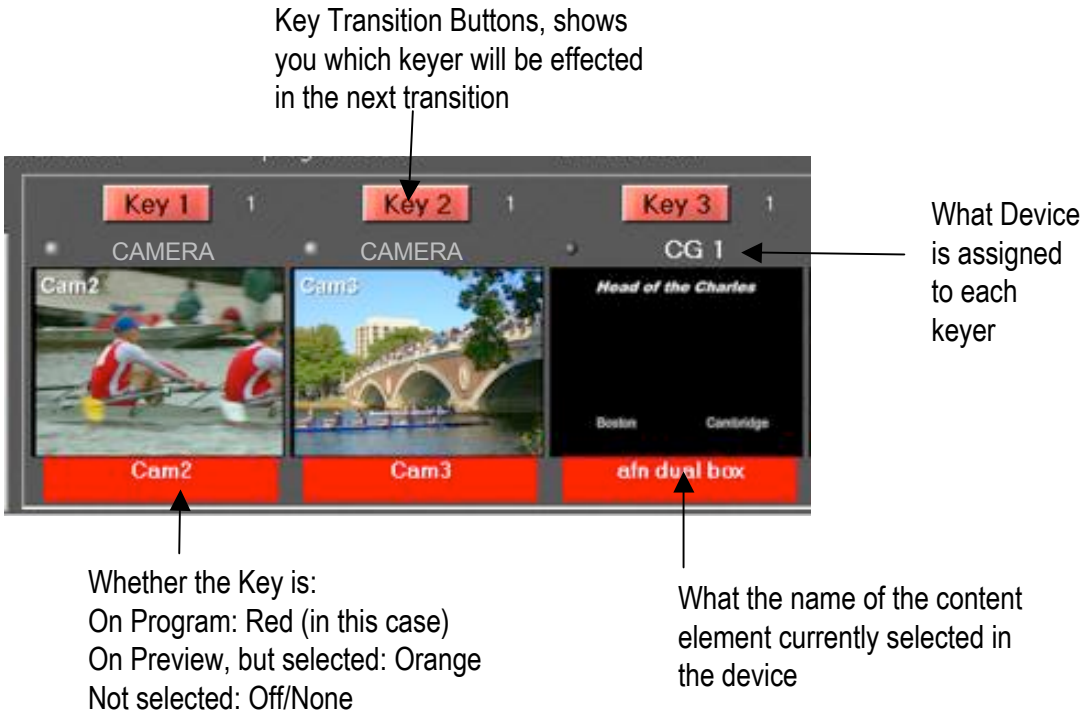
Each source monitor shows the following information:



To view sources above the first 8 or 9 shown, click the sources tab on the Multi-View, as shown below:

2.5.4 Keyer on Multi-View

The Multi-View shows the contents and status of keyers in the lower right hand corner. Just as with sources, a monitor appears that contains the thumbnail of the content that is currently loaded into the keyer. And just as with sources (see preceding page), the name of the assigned device is shown above the thumbnail and the name of the content is shown below along with its tally status.



Transitioning Keys individually with the Multi-View

To Manually Bring a Key On Program:

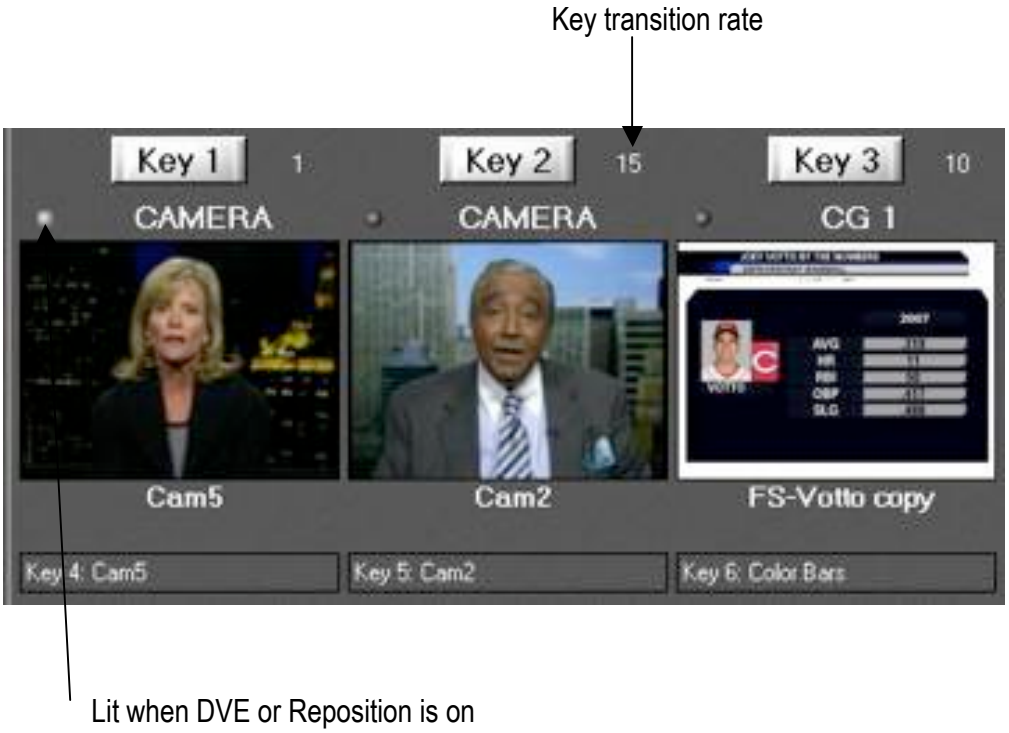
1. Any key that is off-air (grey or orange), can be brought on-air by clicking on its thumbnail on the Multi-View. This will cause this key to fade on-air at the rate for that keyer, and the tally underneath will change color to red.

To Manually Take a Key Off Program:

1. Any key that is on-air (red), can be taken off-air by by clicking on its thumbnail on the Multi-View. This will cause this key to fade off-air at the rate for that keyer, and the tally underneath will change color to red (or orange if its key transition button is on).

2.5.4 Keyer on the Multi-View

Modifiers applied to a Key are also shown on the Multi-View.



2.5.5 Clip Store Counters

Clip counters appear on the Multi-View for each of the two channels of clip store. They display the clip counter with both a number and a moving blue bar. They can be set to either count up and show elapsed time (runtime), or they can be set to count down, to show the remaining time in a clip.
Counters will move at one-second intervals, and with 10 seconds left in the clip the bar will turn red and the counter will move at one-frame intervals.
Clip counters also provide Tally information. Red letters: On Program, Orange letters: On Preview, White letters: Selected in the Clip Store.

To set clips to count down:

1. In BPswitcher click on the **Setup** menu and select **Count down clips**, a check mark will appear as shown. Now both counters and the counter in the display of the control panel will be set to count down.
   (To return to show the elapsed time, uncheck the same setting.)

NOTE: The Clip Counters bar will turn red at 10 seconds remaining only if the Clips Controls Settings are set to not Loop, see section 6.5.4

2.5.6 Basic Switching on Multi-View

The Multi-View is interactive and can be used to switch a show instead of a panel, or as a complement to a panel (SoftPanel or physical control panel). This can be done with a mouse, or with a touchscreen for a more tactile interface.

Basic Moves

To change a content selection in a key or source

To take preview to air

Click on the PixPad **element** desired

Click on the **preview** monitor

To change to a different device on the PixPad

Click on the **tabs** at the top of the PixPad

To select a source

Click on the **source** thumbnail and it goes to preview*

To include a keyer in the next transition

Click on the **key button** and it will illuminate and transition with the background video

To add a key to preview, or take it on/off air (depending on key button status)

Click on the **key** thumbnail

NOTE: When a source is clicked on, it goes to preview but this can be changed to make the selected source go directly to air if desired. To change this in BPswitcher go to the **Setup** drop down window and select **Clicking Sources Switches**, then select the desired style.

2.5.7 Advanced Switching on Multi-View

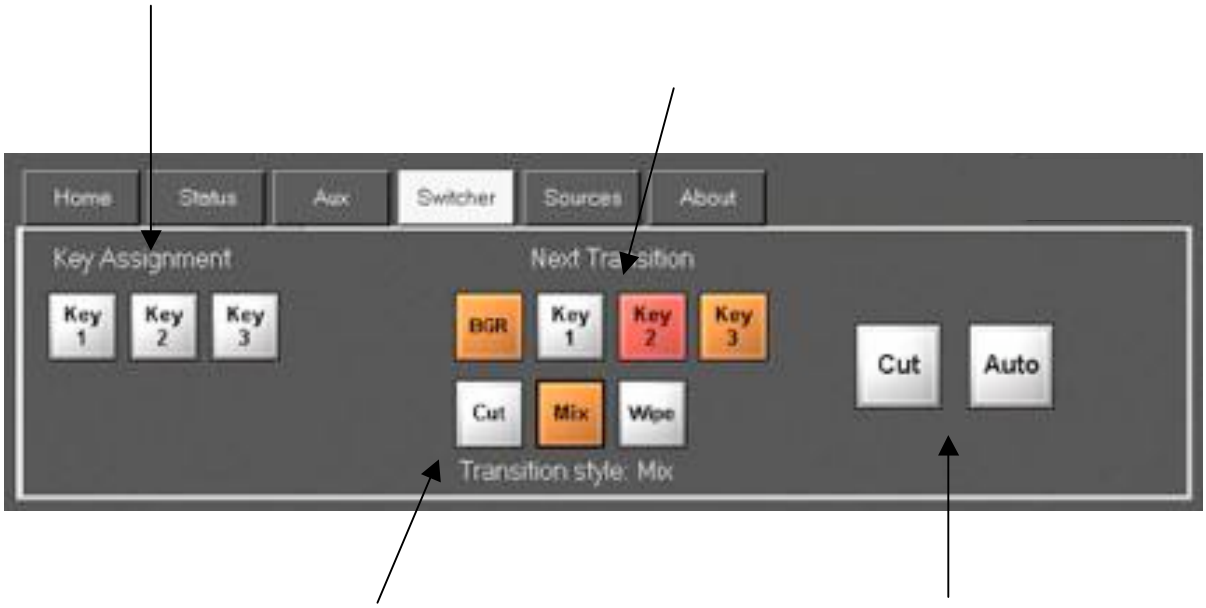
You can access even more switching capabilities on the Multi-View by setting the Tabs Window in the lower left corner of the Multi-View to Switcher, as shown below. These switcher controls work exactly the same as on the control panel. For more switcher controls beyond these, open a SoftPanel or use a control panel.

To assign a source to a keyer

1. Click on one of the three **Key Assignment** buttons shown below
2. Then, click on the thumbnail of the **source** you wish to assign, and its key thumbnail will change to show the new key source.

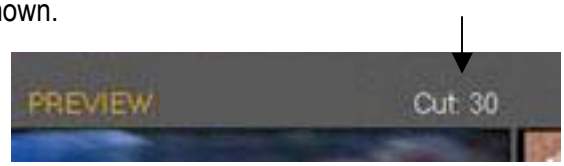
To add keys or background video to the next transition

Click on the **Key or BGR** buttons shown above, and each will illuminate as you click on it and the keyed image will be added to the preview monitor if it is not already on air. The button illuminates red when the key is on air, and orange when it is on preview. (Note: the key buttons in the lower right corner of the panel also perform the same task.)



To change the style of transition that occurs when you click on the preview monitor

Click on **Cut, Mix or Wipe**. Its button will illuminate and its word will appear over the top right corner of the preview monitor along with the transition rate, as shown.



To take preview to air

Either: click on the **preview** monitor, or, click on **cut or auto** above (auto executes whichever transition style is selected)

2.5.8 About Tab

The About tab in the lower left corner of the Multi-View reveals information about the installation, including the:

Current software version installed of Broadcast Pix Switcher

Settings for NTSC/PAL and 4:3/16:9

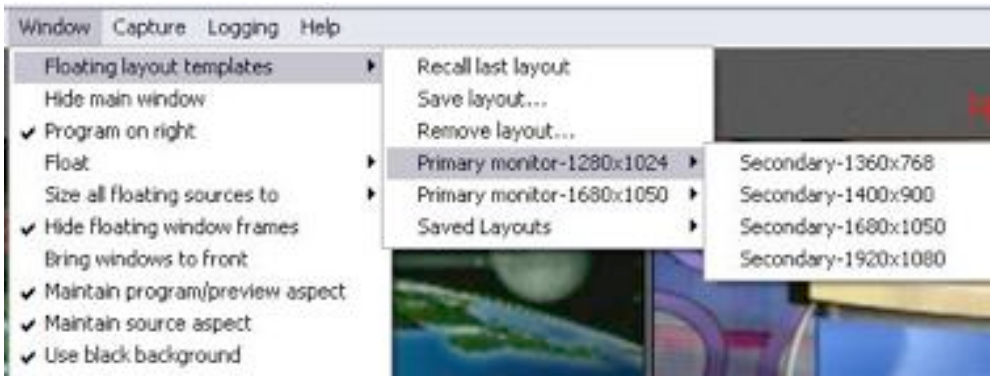
If the iBoB is installed and the current iBoB firmware installed

Panel version

Slate card information

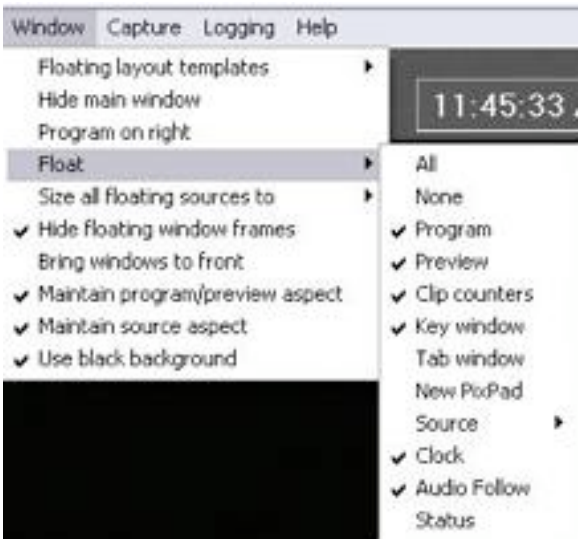
2.5.9 Floating Monitors

Most windows on the Multi-View can be floated, which serves two purposes when working on a dual monitor system. Either create your own custom Multi-View on a large secondary monitor of any resolution, to replace the fixed layout that is supplied, or float selected windows for a secondary graphics or slo-mo operator. You can arrange the windows any way you like, and then save them for later recall. So, each director/producer or each show could have a custom layout tailored to that specific show. 8 floating window templates come installed on your system for easy recall under the **Window, Floating layout templates** menu, as shown below. You may use them as a starting point and modify/save them to your needs.



To Create a Floating Monitor Layout:

1. In BPswitcher, click the **Window** drop down menu, select **Float** (as shown) and you will see the list of windows you can float. Then select the desired items. You may also right-click on the source monitors as a shortcut, to float sources 9-18, select the **Sources Tab,** and right click on the desired sources.

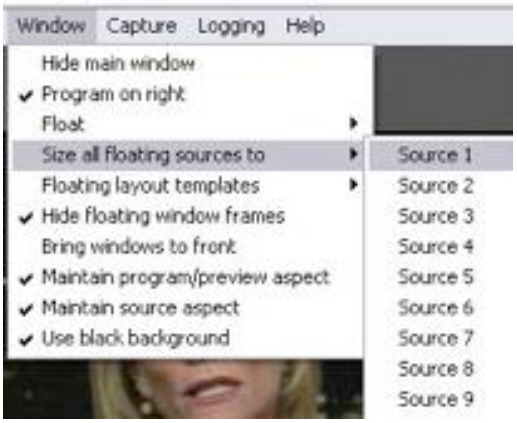


2. After selecting each item, it will appear, and then arrange it on your primary or secondary monitor. Most Floating Monitors can be sized by dragging their corners.

NOTE: The native resolution of the Floating Preview/Program monitors are 320x240, where as the Source monitors are 180x120. When resizing monitors be cautious of how large you make each monitor, as the resolution may be distorted.

3. To align or size floating monitors right-click on the floating monitor and select which source you would like to copy its attributes from, as shown.

   You may also size all the sources to each other by selecting the **Window** menu, then **Size all floating source to.**



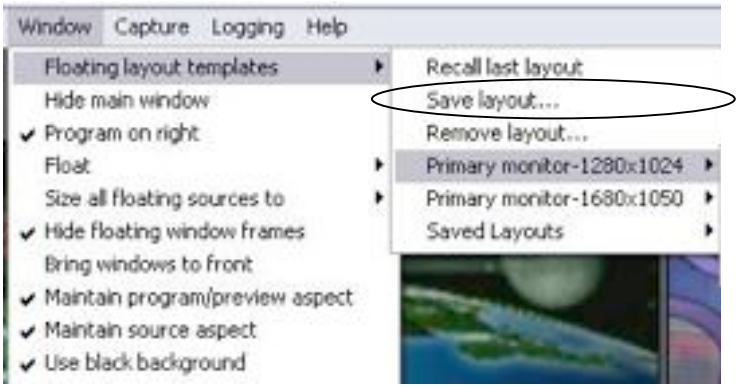
4. Once all your Floating Monitors are placed and sized to your liking, you have the option to not view the Windows XP framing, for a cleaner presentation.
   In the **Window** menu, select **Hide floating window frames.**

5. To make your Floating Monitors stand out in your display, you also have the option to add a black background behind the Floating Monitors.
   In the **Window** menu, select **Use black background.**
   You may also use your own custom background, simply change the Windows XP desktop to your liking in the Display Properties of the workstation.

6. In some scenarios it may be desired to hide the main Multi-View and use the only the Floating Windows. To do so in the **Window** menu, select **Hide Main Window.**

NOTE: To close or modify one floating monitor, right click on the window and select **Show/hide frame** to activate the window frame for that one monitor or select **Close window** to close that monitor.

7. You may save the layout that you've created by, selecting the **Window** drop down menu, then **Floating layout templates**, as shown, and then select **Save layout…** in the right column, and the Save Layout window will appear as shown below.



8. Enter the name you wish to give the layout in the **Layout name** field. You may also save layouts in different sub-folders. Simply click in the **Layout folder** field to enter the name of the folder, for example 'Saved Layouts'. If no name is entered, then your saved layout will appear in the main menu under the factory-designed layouts .

9. Click **OK** to save it. Now it will appear in the Floating layout templates drop down list where you can recall it in the future.

10. You can also remove a saved layout by selecting **Remove Layout…** in the above list.

NOTE: Only a total of 8 external sources can update live on the Multi-View. When using the iBoB, only 4 external sources can be updated live at any given time. When using the optional Slate input card, all 4 of those sources can update live.

2.6 List of Screen Resolutions

Computer monitors should always be square pixels, and the display resolution should have the same ratio as the aspect of the screen. The aspect of screen should never be compensated for, this would distort text and images making them look too wide or skinny.
Below is a list of Monitor Resolutions with their native aspect ratios for easy reference. If your monitor is "wide-screen" use a 16:9 or a 16:10 resolution. For normal square screens use a 4:3 resolution. This is important when choosing a monitor to use with your Multi-View or Floating Monitors to ensure proper viewing/monitoring. You may use any screen resolution for Floating Monitors, currently the Multi-View supports only 1280x1024 and 1680x1050 screen resolutions.

4:3 Aspect Ratio	16:9 Aspect Ratio	16:10 Aspect Ratio
1024×768	1024×576	1280×800
1152×864	1280×720	1440×900
1280×1024	1366×768	1680×1050
1400×1050	1920×1080	1920×1200
1600×1200	2048×1152	2560×1600
2048×1536		

It is important to set your Windows desktop settings prior to starting the Broadcast Pix Switcher application. It is not advised to change the desktop resolutions while the application is running. Be advised that some large LCD/Plasma monitors do not accept high resolutions on the VGA input, but do on a HDMI input. A DVI to HDMI cable or converter may be necessary, refer to your monitors user's manual for more information.

2.6.1 Adjusting the Windows Desktop Screen Resolution

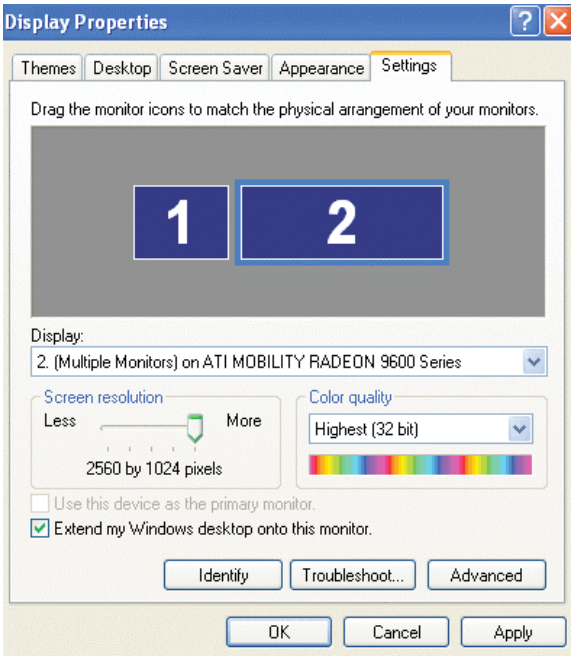
1. **Right-Click** on any blank area of the Windows desktop of the computer (again making sure that BPswitcher is not running).

2. Select **Properties** from the pop up menu. This will bring up the Display Properties Window.

3. Select the **Settings** tab, as shown.

4. Select the monitor which you want to modify, and in the **Screen Resolution** section select the appropriate setting for your monitor.

5. Select **OK** to save your changes.



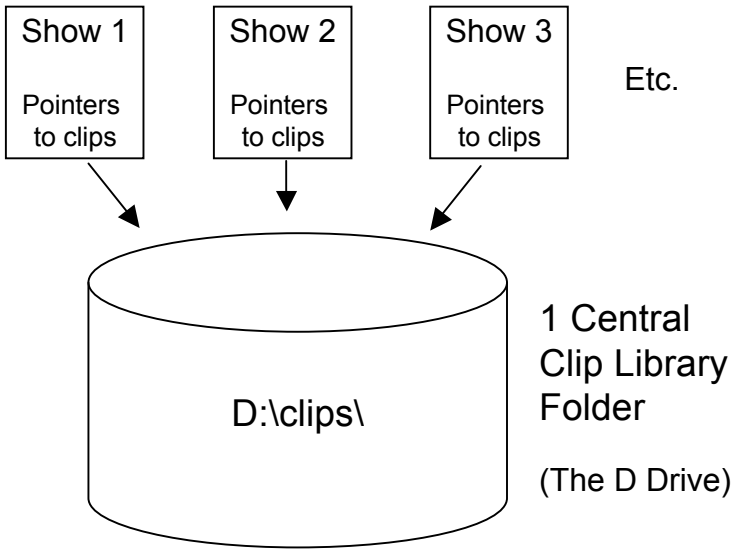
Section 3:
PixMaster Show Editor

The Broadcast Pix System is designed for the real-time production of live shows to a live audience, or recorded live for viewing later on DVD or other medium. In both scenarios, the PixMaster show editor delivers comprehensive pre-production capabilities, enabling you to stage all of your assets for a smooth production experience. As with most other endeavors, the more preparation, the better.

3.0 PixMaster Storage System

PixMaster is an advanced file system that is pointer based. In PixMaster, all content is kept in large central library folders, and then a show is just a collection of pointers. In this way, you do not have to make copies of the same clip for different shows, which can eat up a lot of disk space.

For example, the central clip library is the clips folder on the systems D drive, and it's formal name is D:\\clips\ as illustrated below. All clips live in this central folder, and editing a show simply means editing your pointers for that show.



There are also three central library folders on the C Drive for graphics, each of which corresponds to a button on the panel. They are:

Stills	C:\\graphics\stills\
CG	C:\\graphics\cg\
Logo	C:\\graphics\logo\

NOTE: You may have up to one sub-folder within the Still, CG, Logo and Clips folders, to assist in organizing your content. Any other folders will not be seen in PixMaster.

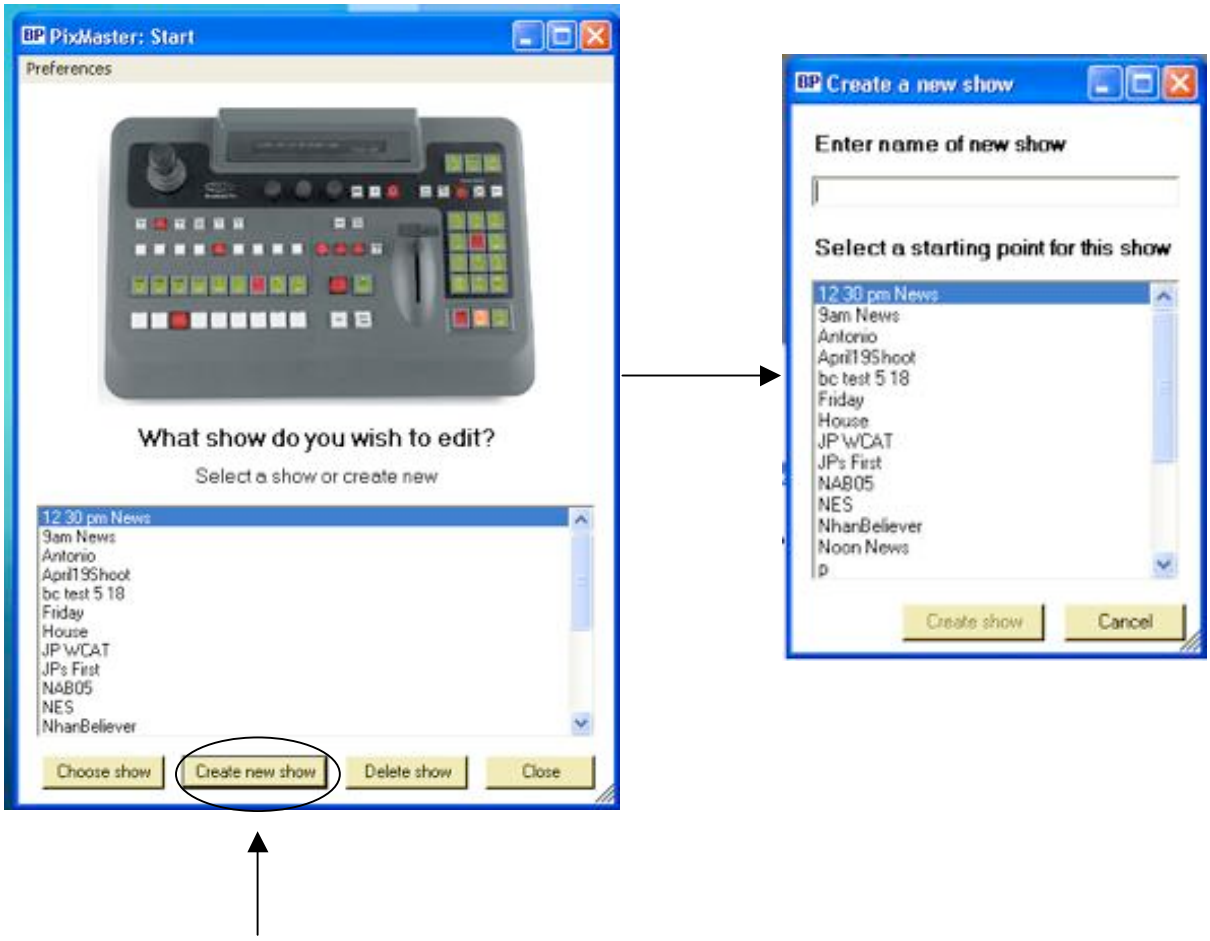
3.1 Creating a New Show

To create a new show you must always launch PixMaster from its desktop icon. A new show must always reference an existing show as a starting point. For this reason it is recommended to create a “Generic Show” that has all inputs/sources mapped to the switcher, and all devices pointed to the correct folders.

To Create a New Show:

1. Launch PixMaster by double-clicking on the **PixMaster** icon on the desktop, as illustrated at the right. This will open the PixMaster: Start Window as shown below. The main Broadcast Pix Switcher application needs to be closed in order to launch PixMaster.

2. Click on **Create New Show**. This opens the Create a new show window.



3. Select a **starting point** for this show by selecting one of the previous shows, which could include the Sample Show that shipped with your system. When you select it, it will highlight, as shown at the right.

   The starting point determines how your sources are mapped to the switcher, as well as the content assigned to each source.

   You can then edit from that starting point. You may want to create one or more default shows as your universal starting point.

4. Give the new show a name, by entering it under **Enter name of new show.**

   In the example shown at the right, the new show name is 6pm News and its starting point is the 12 30 pm News.

5. Click on **Create Show** and it will open in PixMaster, as shown in section 3.3.

NOTE: when giving a new show a name, standard Microsoft Windows conventions apply. For example, you cannot use a colon (:) in a name.

3.2 Selecting an Existing Show to Edit

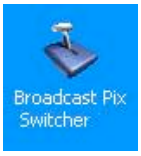
There are two ways to launch PixMaster to edit an existing show, either from the desktop or from within BPswitcher.

From PixMaster:

1. Double-Click on the **PixMaster icon** on the Desktop, as shown above, and the PixMaster Start window will appear, as shown at the right.

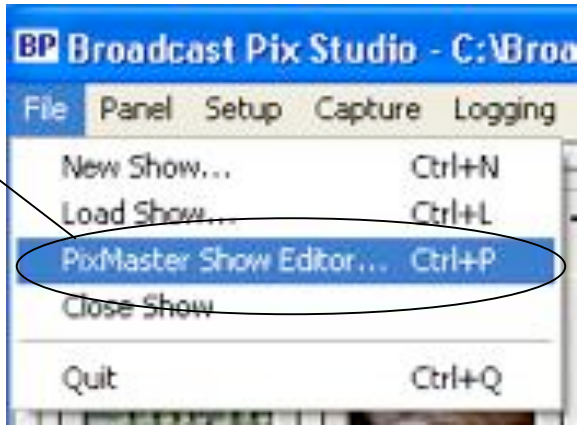
2. Double-click on the **Show** you wish to open, and it will open in PixMaster as shown in section 3.3. (You can also single-click on the show name and then press the "Choose Show" button.)

From Switcher:



1. Select the **File** menu, as shown at the right, and click on **PixMaster Show Editor.**

   The show that you have open with now open in PixMaster, (as shown in section 3.3).



NOTE: If you do not have a show open, you can not access the PixMaster Show Editor from the Multi-View, as it will be grayed out.

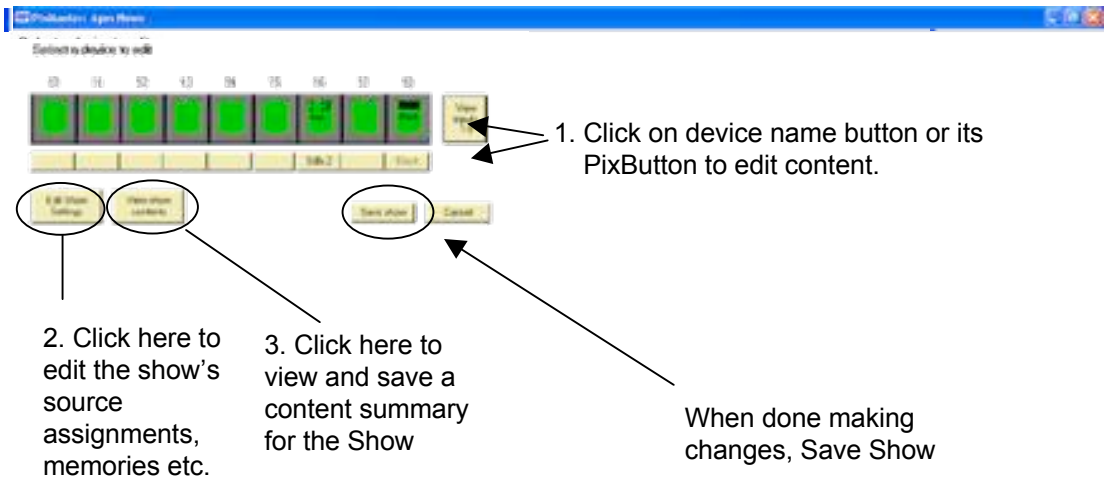
3.3 Editing a Show

When you select a show to edit, it will open in the PixMaster window for that show. In the illustration shown below, a show called 6 pm News has been opened for editing. The primary source row for this show will be shown, complete with the exact PixButtons. In general, there are three things you can do from here:

1. Select which devices' content to edit by clicking on its name or PixButton.

2. Select Edit Show Settings to edit the show's switcher source assignments, memories, extra devices assigned to the 3 wildcard buttons in the upper right corner of the panel, or access the global Break-out-Box settings.

3. View and save the content summary for the show.



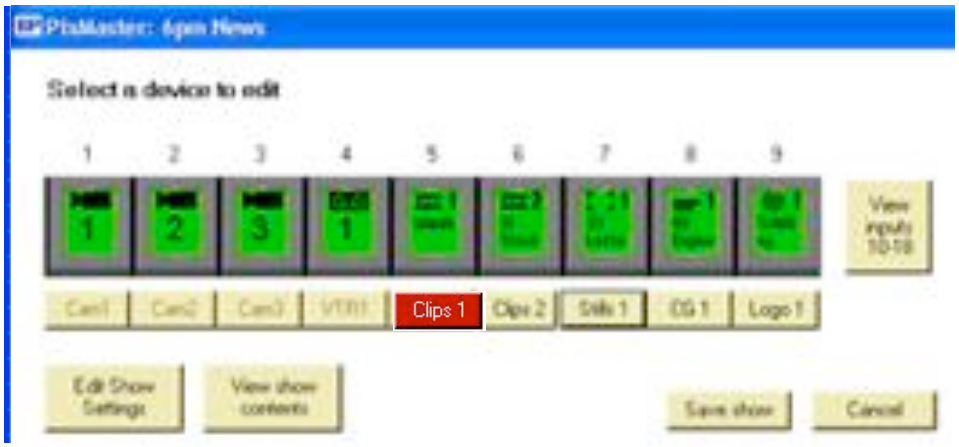
PixMaster Show Editor

NOTE: It is recommended to restart the Broadcast Pix Switcher application when adding, removing or arranging a lot of content to prevent stability issues.

3.4 Editing a Show's Content

Select the device whose content you wish to edit by clicking on its **PixButton** or **name** below the PixButton and its content window will open.

For example, if you click on Clips 1, its name will illuminate red, as shown at the right, and the Clips 1 Content Window for this show will open.



Content Window:

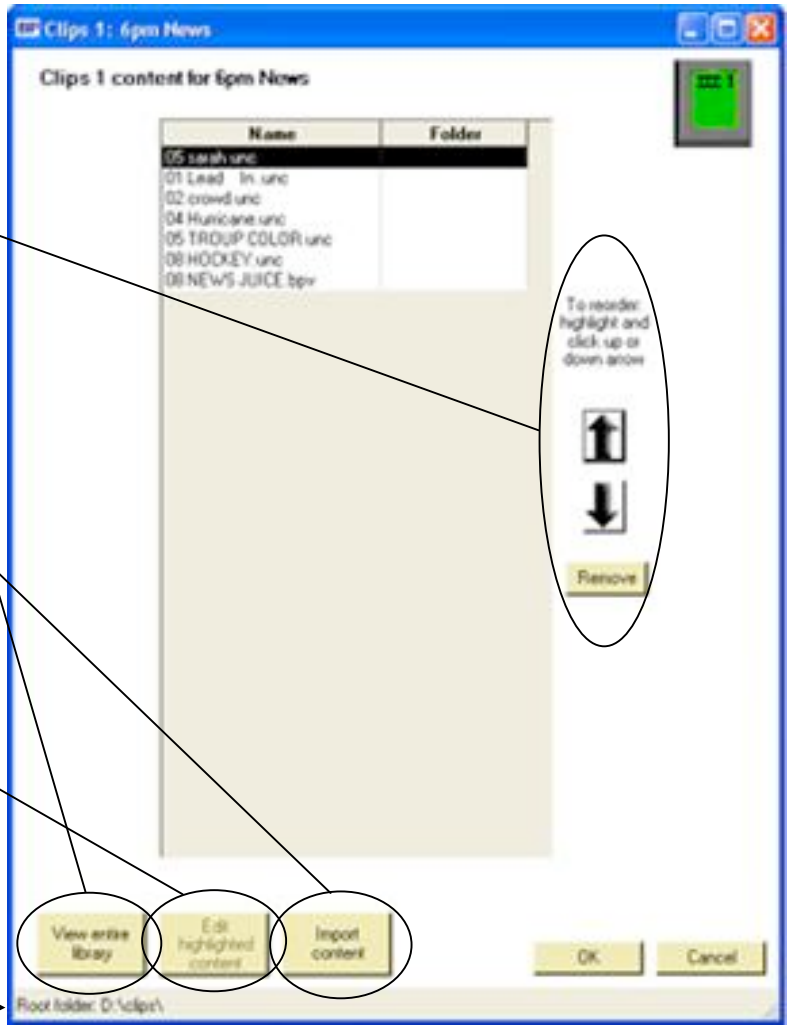
The content window, in this case for the "Clips 1" clip store, enables you to:

Reorder the clips in the show

Add new clips to this show from the central storage location for clips known as the clips library.

Import new clips into this show (and into the library from anywhere on your system or network.

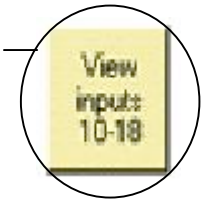
Edit While clips cannot be edited, one kind of graphics (ICG files) can be edited from here as well simply by selecting one in a Content Window for a CG, still, or logo store.

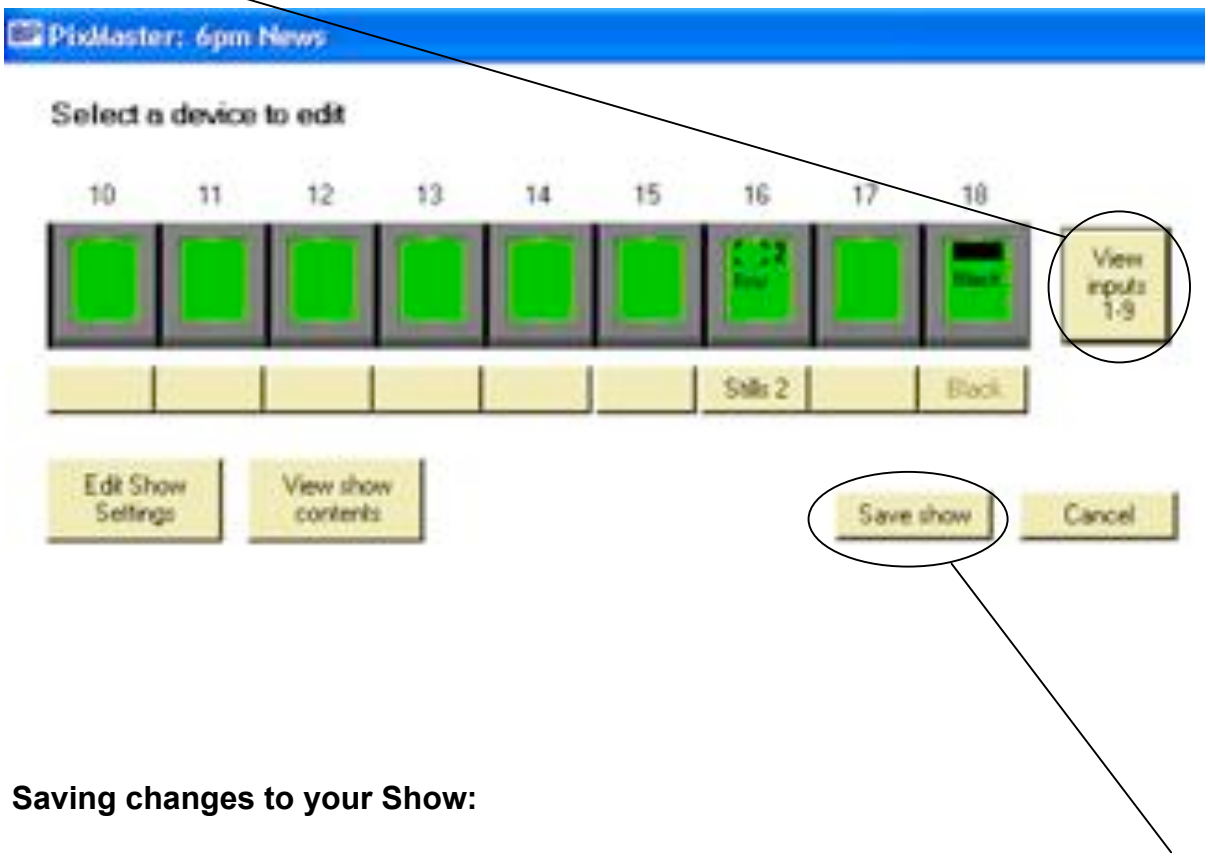


NOTE: the location of the clip library for the show is indicated at the bottom – in this case D:\clips\

Accessing Shifted Inputs

To access the devices on sources 10-18, click on the View Inputs 10-18 button. These devices then appear, as illustrated below. This works like the switcher panel, where inputs 10-18 are accessed with the shift button. When you want to return to inputs 1-9, click on the View Inputs 1-9 button.





Saving changes to your Show:

The only way to actually save and apply any changes to your show is to click on **Save Show.** If you forget to click on save show, then when you attempt to shut the Big PixMaster window you will get an reminder, as shown below.

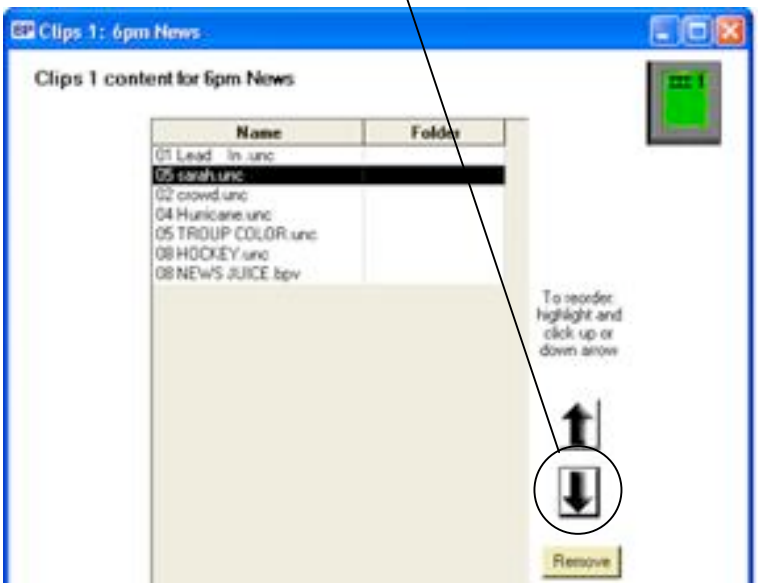
NOTE: When you edit a device's content or the switcher source assignments, and then click on OK, the changes you just made are temporary. They will be saved permanently when you click on Save Show.

3.5 Reorder, Add, or Remove Content

3.5.1 To Reorder Content:

1. **Select** the content you wish to move, and it will highlight.

2. Click on the **up arrow** or **down arrow** and the highlighted clip will move down or up one position. Each time you click it will move once. In the illustration below, it has been clicked down once, so it moved one position.



3. Press **OK.**

NOTE: If you're doing a lot of editing, you do not have to press OK until you are done with everything.

3.5.2 To Reorder a Group of Content

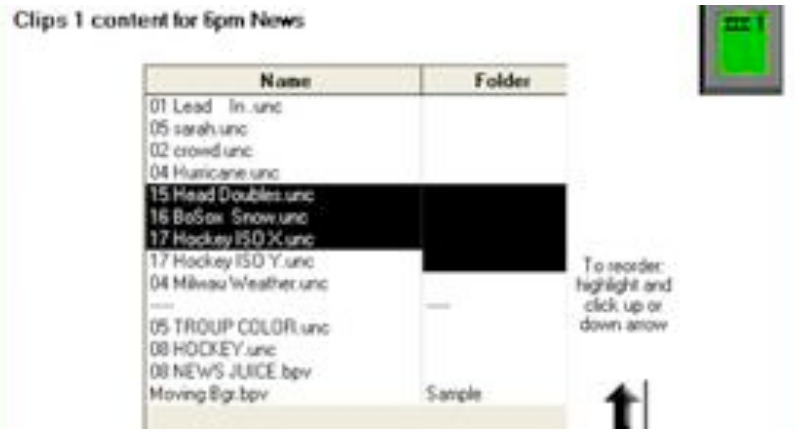
In addition to moving a file clip up and done the list, you can also move an entire group of elements at once.

To move a group manually:

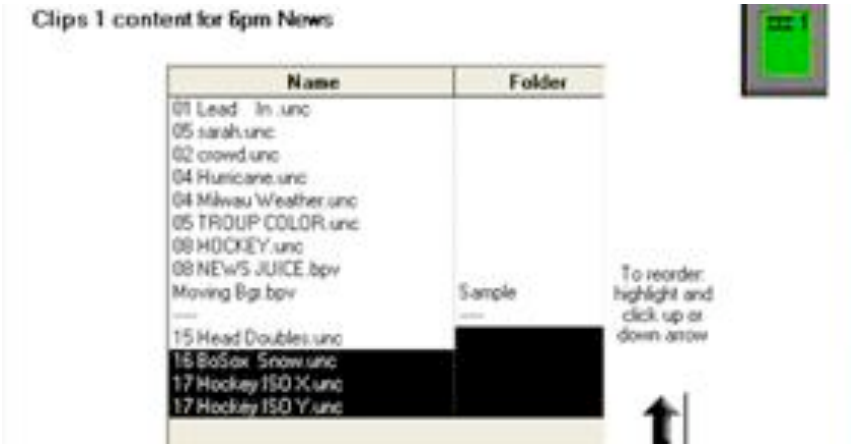
1. **Select** the first item you wish to move with your mouse, and it will highlight.

2. Press **Shift** on your keyboard, and hold it down.

3. **Select the last item** you wish to move, and all the ones in between will highlight:



4. Then click the **up or down** button one time for each position that you want the selected group to move. In this case, four adjacent clips were moved down to the bottom of the list.

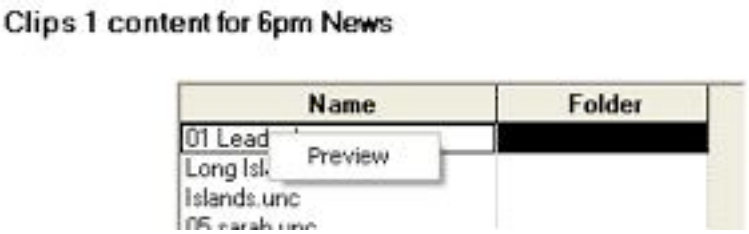


3.5.3 To Preview Content

At any time you can see a large thumbnail of any content element in any store.

For example, to preview a clip in a show's Clip 1 store:

1. Select the item you wish to preview by **"right clicking"** on it with the mouse, and the word preview will appear.



2. Click on **Preview**, and the still will appear.

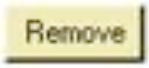
3. To close the still being previewed, click on the **red X** in its upper right corner.

NOTE: If no Preview is shown, then a thumbnail needs to created for that clip, see section 6.1.1

3.5.4 To Remove Content from a Show

1. **Select** the item you wish to remove, and it will highlight.

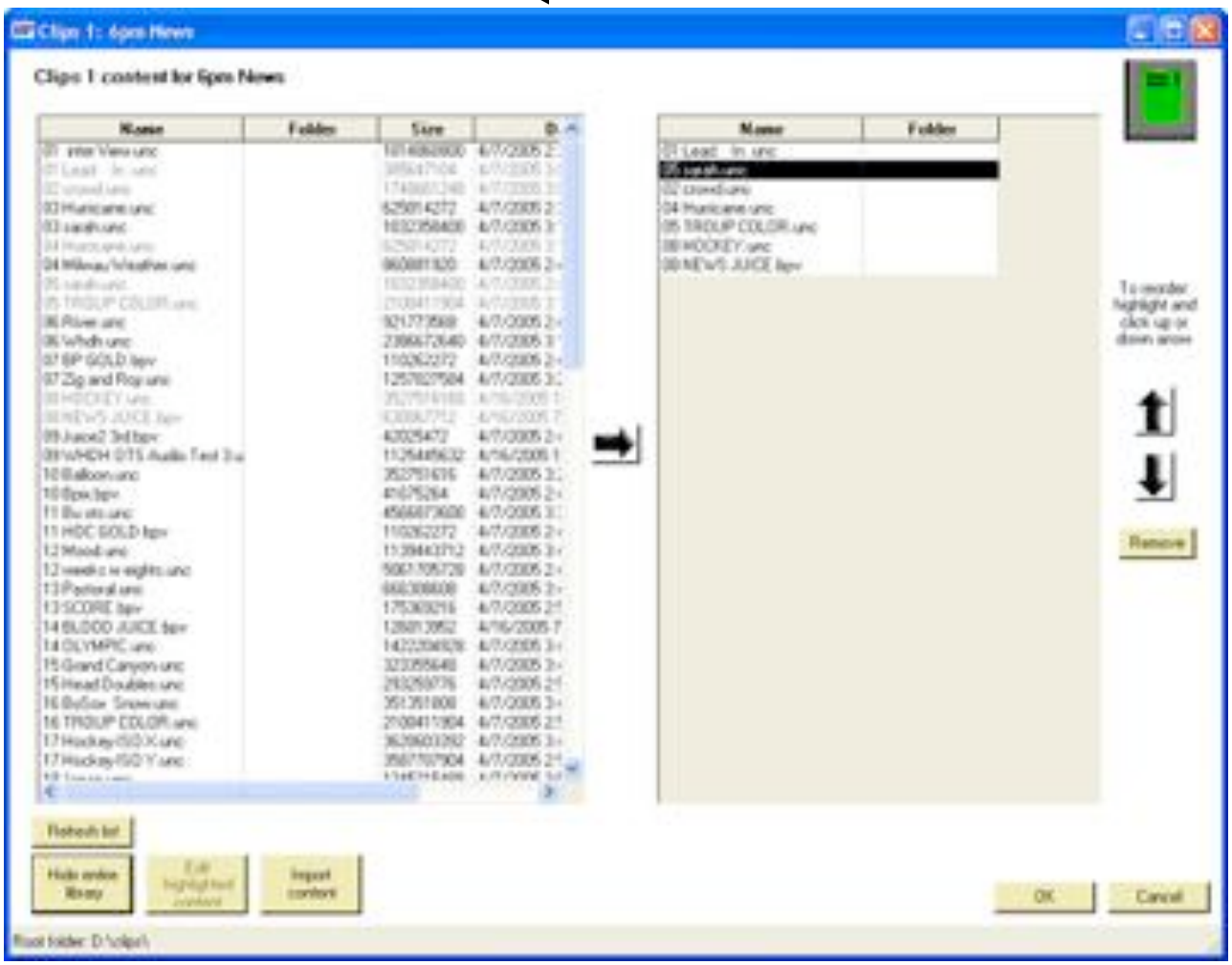
2. Click on **remove**, and it will be removed from the show. The content will still be retained in the central clip library, as removing a clip does not delete it from your system. If you want to delete content from the hard drive, see section 3.7.



3.5.5 To Add Content From the Central Library

1. View the content in the central clip library by clicking on **View entire library.** This will open the complete library:

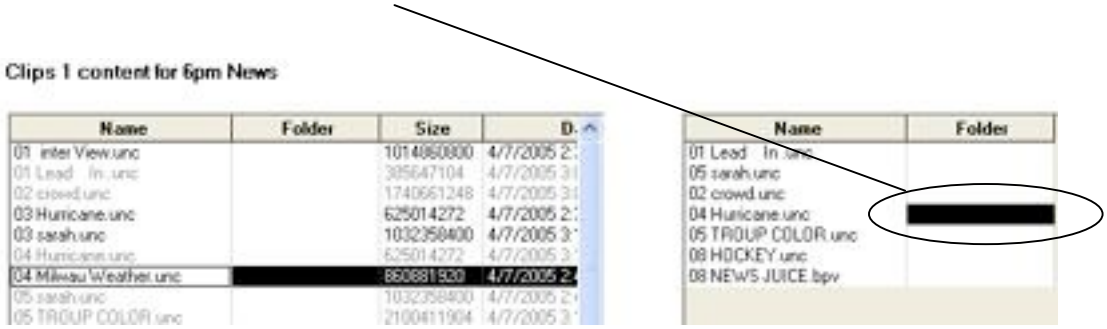
NOTE: Items already in the show are grayed out in the library, while the items not displayed in the show are in black.



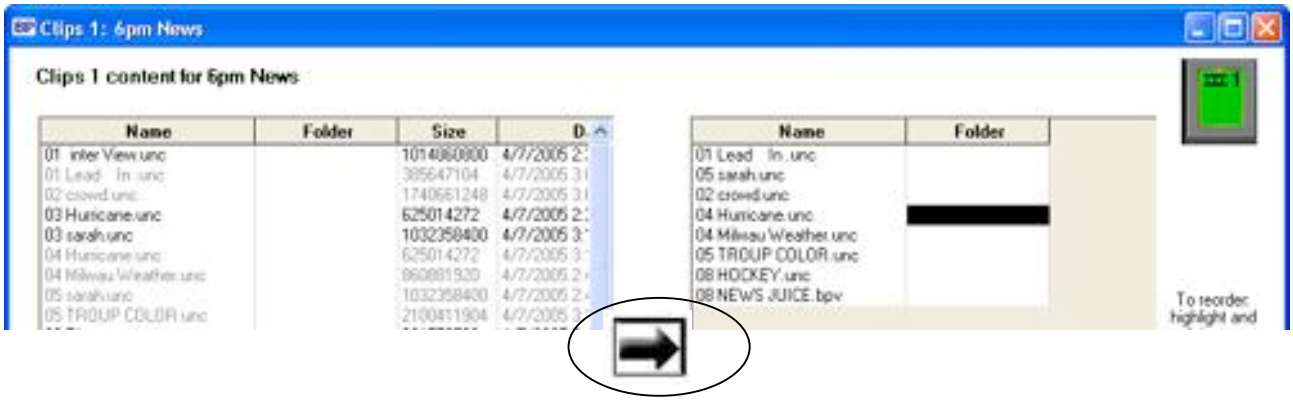
NOTE: the Refresh List button is used if you edit a library using Microsoft Windows, then changes made can be seen by clicking on refresh list (or reopening PixMaster).

2. **Select** the clip you wish to move into the show by clicking on it (it will highlight).

3. Select **where** you wish to insert the new clip into the show by touching the mouse on the show's content list on the right side. In the illustration below Hurricane was selected, and so the 04 Milwaukee Weather clip will be inserted after the Hurricane clip.



4. Press the **forward arrow,** in the middle of the screen. The clip is now inserted into the desired position in the show.



NOTE: The newly added content is now grayed out on the library list to indicate that it is now in the show.

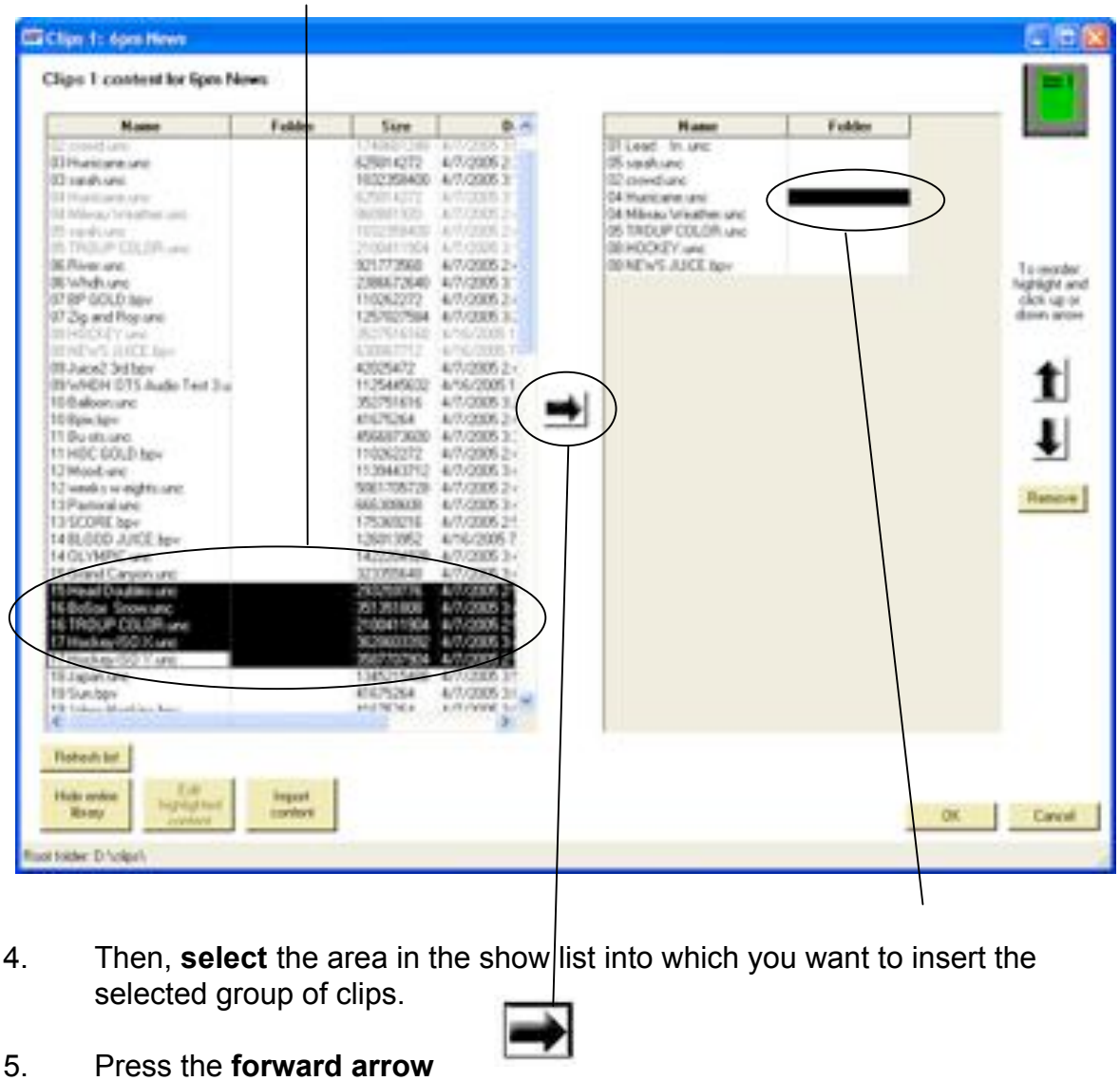
3.5.6 To Add a Group of Content from the Central Library

You don't have to add clips one at a time. You can bring in any contiguous group from the library list at one time.

1. Click on the **first item** of the group you wish to move, and it will highlight

2. Hold down **shift** on the keyboard

3. Click on the **last item** of the group you wish to move and it and all the ones in between will highlight.



4. Then, **select** the area in the show list into which you want to insert the selected group of clips.

5. Press the **forward arrow**

NOTE: You can also select and move non-contiguous material by holding down the Ctrl key while selecting individual items in the library. This is a standard Windows convention, and works in all other areas of the system.

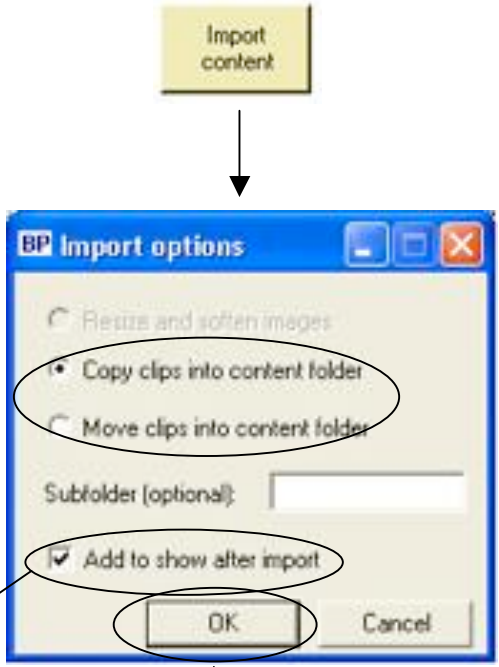
3.6 To Import Clips or Graphics

In addition to adding clips and graphics to the show from the central clip library, you can also import clips from other locations on the computer, such as from a hard drive, CD, DVD, external disk, USB flash memory or a (computer) network location.

1. To import a clip into the example Clips 1 store shown on the previous page, click on the **Import Content** button This will open the Import Options window.

2. For Clips, choose whether you want to **move** the clip from where it is now, or make a **copy** of it and place the copy in the existing library. *If you keep all your clips in one central location, then select "Move."* In this example we have chosen to "Copy" the clip into the library. This keeps copies of the clip in two locations.

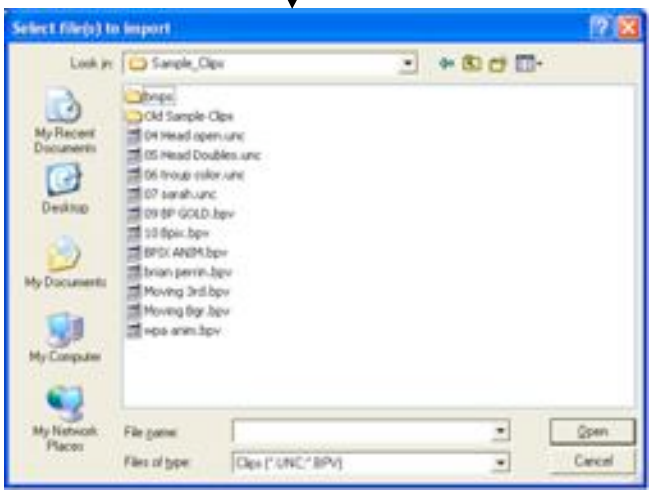
3. The imported clip with be automatically added to the show upon import, since that box is **checked**, as shown above. If you do not want this, (and instead just want to add it to the library, but not the show), then simply uncheck the box.



4. Press **OK**.
   A browser window opens.

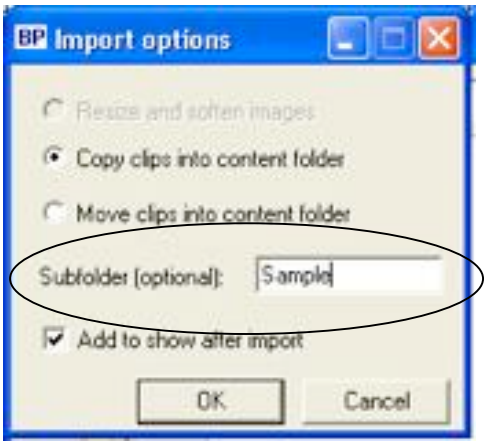
5. Use standard Microsoft Windows navigation to **browse** to the location of the clip you wish to import. **Select** it and it will appear in the File name window.

6. Press **Open**. The clip imports.



3.6.1 Importing into a Subfolder

When importing, if you want to identify a **subfolder** for this clip or group of clips then fill in its name on the blank line before you press OK. This is handy for remembering a series of related clips, especially when it comes time to clean excess media off your drives (remember, uncompressed clips take up lots of space on your drive…approximately 1.4MB per frame!).



In this example we created a subfolder called “Sample.” Consequently the word “Sample” was added in the folder column when the clip was imported.

3.6.2 Resize and Soften Images

When content is imported it can either come in as is, or the images can be resized and softened upon import. This is particularly useful when you are treating graphic images such as PowerPoint slides for video presentation.

To Resize and Soften:

1. As with any import, in PixMaster, select the device to which you wish to import. A content window will open for that device. Then click on **View Entire Library**, and the content window will expand. Click on **Import Content**, and the "Import options" window will appear.

2. To resize and soften click on **Resize and soften images**, as shown below.

3. Proceed with the import as before, (see section 3.6, step 2).

3.6.3 Importing PowerPoint Slides into a Still Store

1. In PowerPoint use "Save As" to save your presentation as a series of .bmp or .jpg files.

2. When importing them into Broadcast Pix be sure to choose **Resize and soften** images.

3.7 To Delete Content from the Library (permanently)

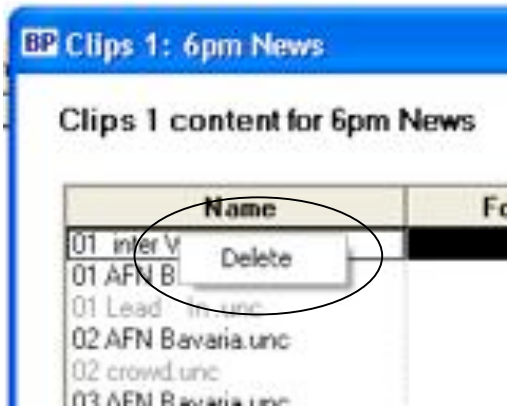
There are two ways to permanently delete a clip or graphic from a library. Either use PixMaster as described below, or use Microsoft Windows to navigate to the file you wish to delete, and then manually delete it.

To Delete a Clip or Graphic from the Library within PixMaster:

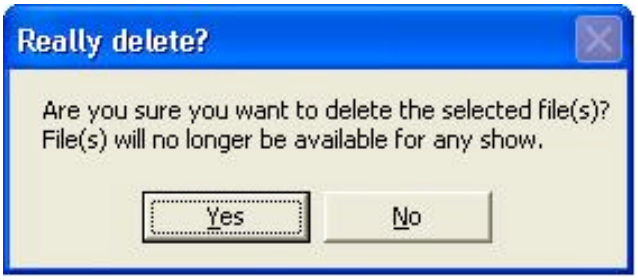
1. In PixMaster, select a **show,** and then a **device**, and its content window will open.

2. Click on **View entire library** and the content window will expand to show the library.

3. **Right click** your mouse on the **item** you wish to delete, and the word Delete will appear in a white box, as shown below.



4. Click on the word **Delete**, and a window will pop up to ask to confirm your decision, as it will completely remove the item from your system so that it will not be usable by any show.



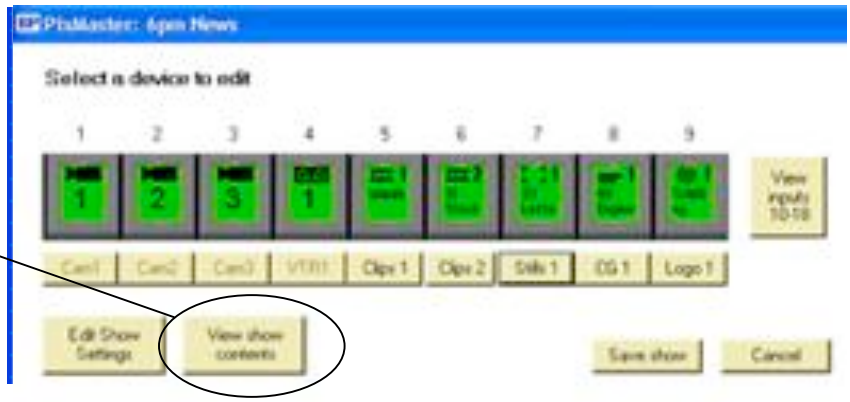
5. Click **OK.** It's gone.

3.8 Show Content Summary

The Content Summary allows you to see, save and print a handy list of all your show's content.

To View a show's Content Summary:

On the PixMaster window for the desired show, click on **View show contents**. The View Show Contents window will open.

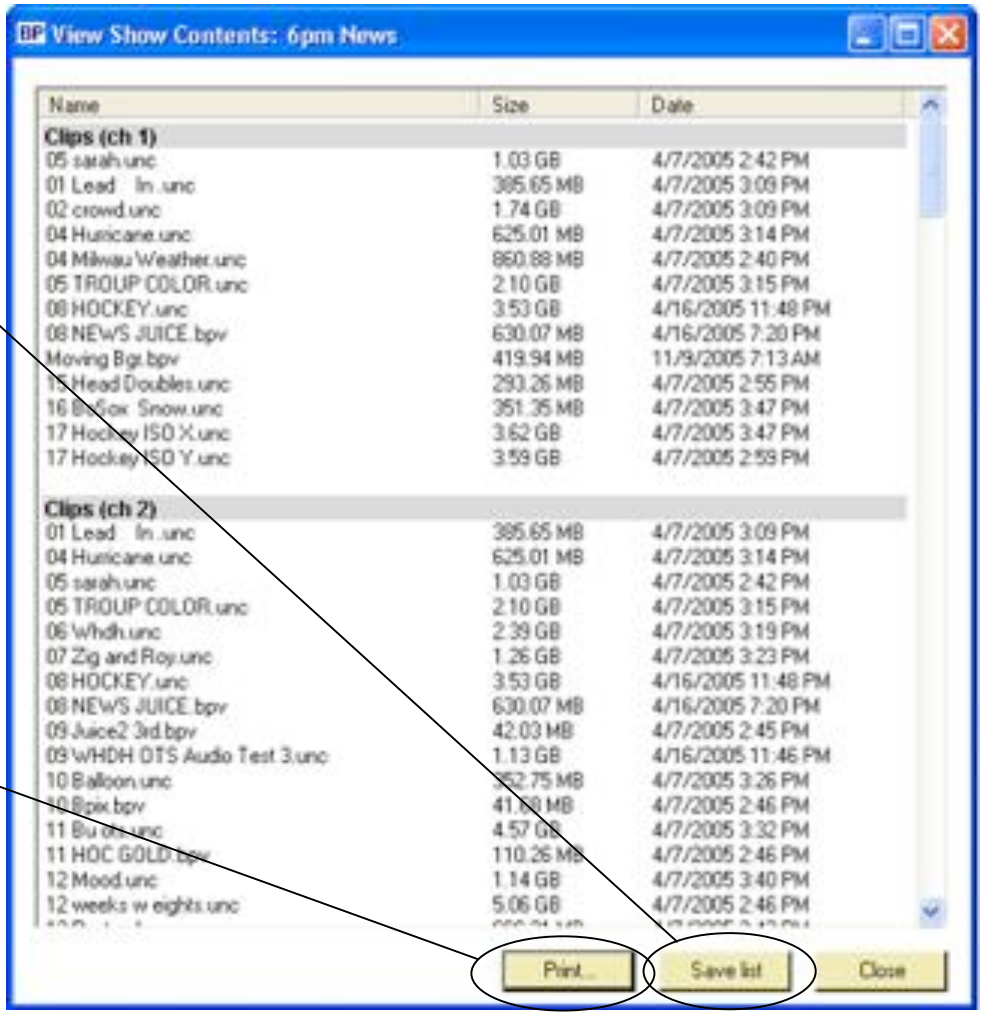


To Save the Content Summary:

You can save this by clicking on **Save List**. It is saved as a text delineated file, which can then be opened in columns with a program like excel.

To Print the Content Summary

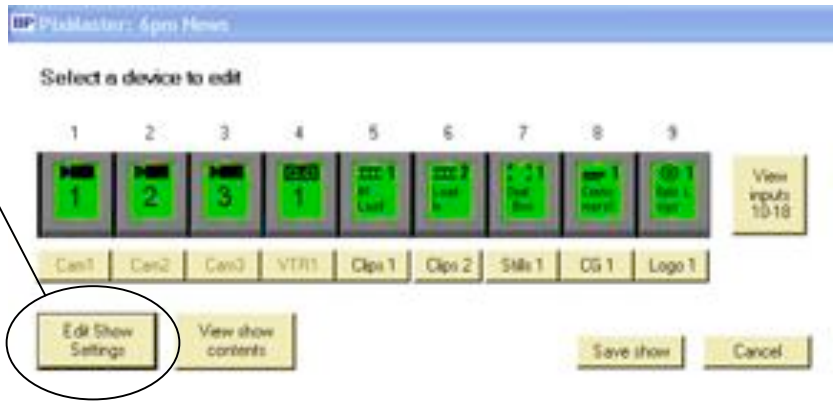
If you have a printer installed on your system, you can print the list by clicking on **Print.**



3.9 Edit Show Settings

In addition to the content in a show, you can also edit its settings and setups

To access the show settings, click on **Edit Show Settings** and the Settings Windows for the Show will appear.



The Show Settings window enables you to edit:

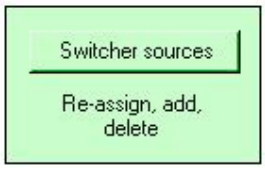
Switcher sources	for source assignments, and auto-fail-safe assignment.
More devices	for the three wildcard device PixButtons.
Memories	for preset onscreen layouts and actions.

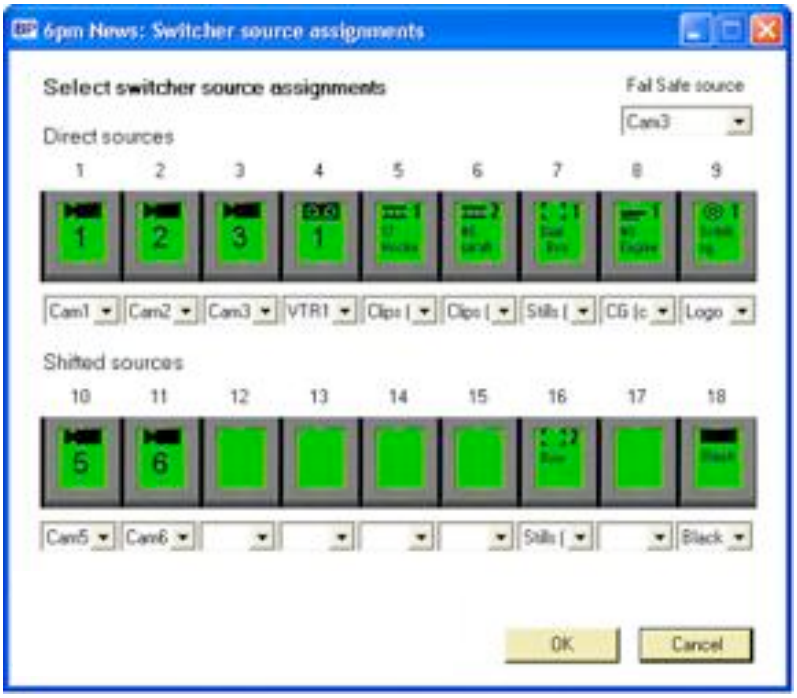
.

3.9.1 Switcher Source Assignments

Each show can have unique switcher source assignments. To change them:

1. On the Show Settings window, click on the **Switcher sources** button. The Switcher source assignments window will open.

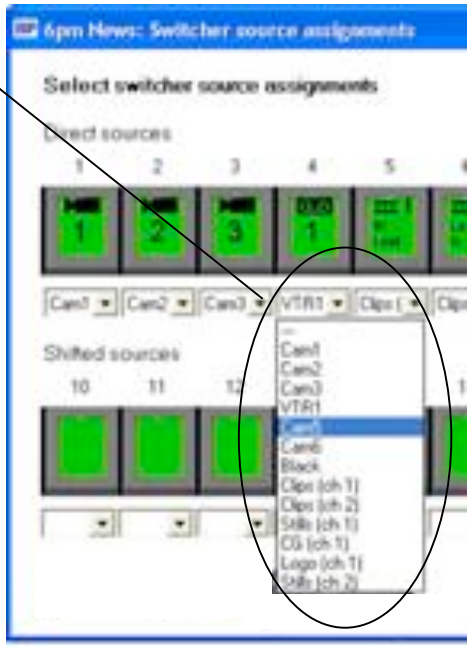


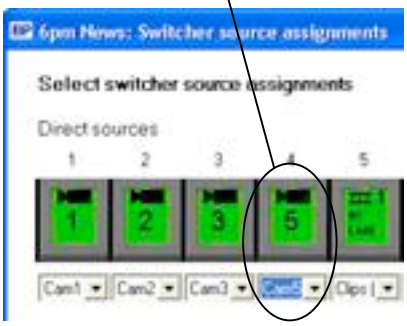


2. Select the source you wish to change by clicking on its **name**. A drop down menu will appear.

3. Click on the device you want – **Cam5** in this example. Your choice is now reflected in the source assignments window.

4. Click on **OK.**





3.9.2 Auto Fail Safe Setting

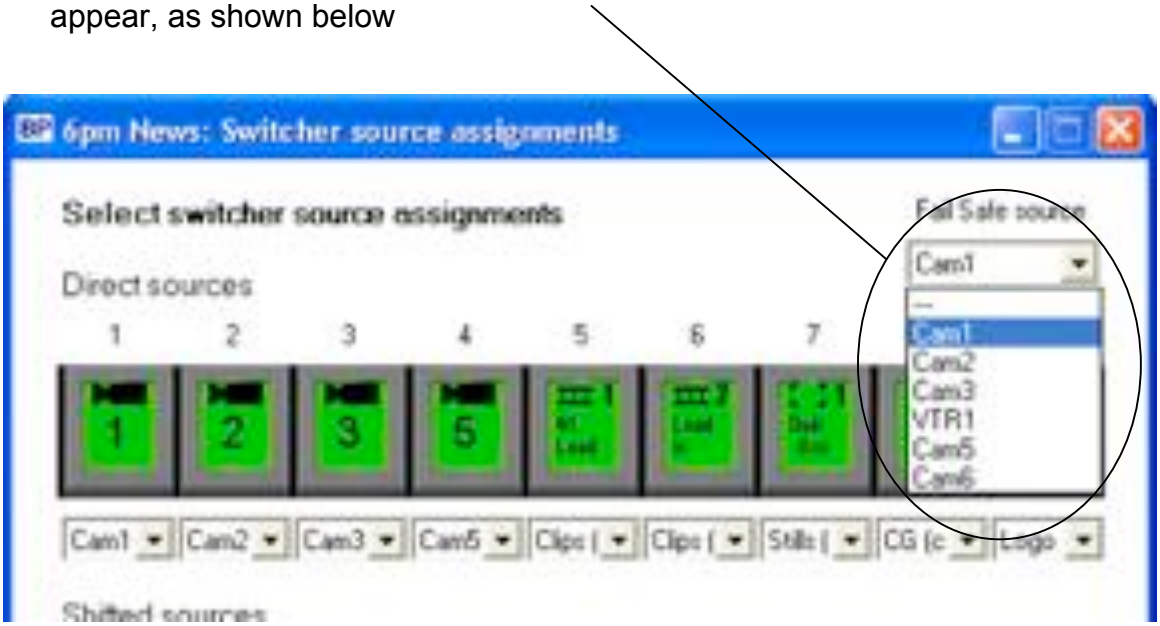
The Broadcast Pix Slate 2100 Switcher has extensive fail safe capabilities that enable you to continue a broadcast uninterrupted even if your computer workstation goes offline (see section 4.11).

If the workstation or its network is ever lost, unplugged or locks up in the middle of a show, the system's fail safe mechanism takes over and brings to program whatever Fail Safe source the system is set to. One of the features of this fail safe capability is that you can identify a source to fail-over to, or you can select none if you prefer to do it manually.

To set the auto Fail Safe source:

1. Navigate to the Switcher source assignments window, as described in section 3.9.1.

2. Click on the down arrow under of **Fail Safe source** and a drop down menu will appear, as shown below



3. Select the **Camera** or other live source (you can only select a live source).

4. Click on **OK.**

NOTE: If you do not wish the system to change sources when it fails, then select the **----** on the drop down menu. Then when it goes into fail safe you can manually select the desired source from the switcher panel.

3.9.3 Adding Wildcard Devices

The Sample Show that comes with the Broadcast Pix system has four standard content devices: Clip1, Still1, CG1 and Logo1, and there are dedicated buttons on the source panel for each. There are an additional 3 wildcard device buttons in the top right corner of the panel which can be assigned to the second channel of a Clip, Still or CG, external control of cameras and servers, or iBoB DSK if enabled from the Setup Menu.

To add a wildcard device:

1. On the Show Settings window, click on **More Devices** and the Add Device window will open.

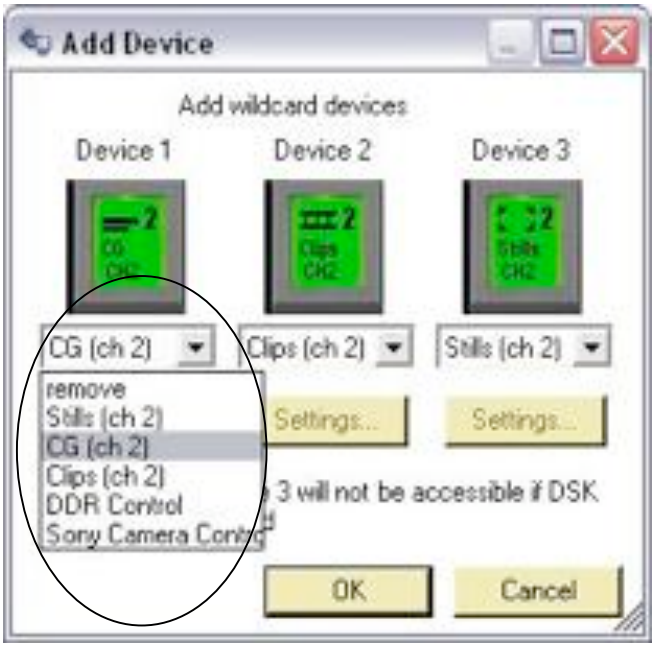
2. In the Add Device window, click on the **drop down menu** under the wildcard button you wish to edit. A drop down menu containing available devices appears, see below.

3. Select the **desired device** from the drop down window.

   NOTE: If you select a another channel of a content device, you will be asked to select content for it.

4. Click on **OK.**

5. Be sure to map these newly assigned devices to your switcher, as described in section 3.9.1.



3.9.4 Show Memories

The StudioMemory on the Broadcast Pix enables panel setups to be saved that contain all the classic switcher settings, like key settings, DVEs, sources, etc. as well as the exact content in clip and graphic stores, complete with attributes, like mark points, auto-start, crawl speed, etc. For more on creating memories, see section 4.10.

The memory controls in PixMaster enable you to:

1. **Choose** which memories are to be used within a show.

2. Change the **order** in which the memories are displayed on the Mem PixPad

3. **Name** the Memories (globally), and create a custom PixButton image for them

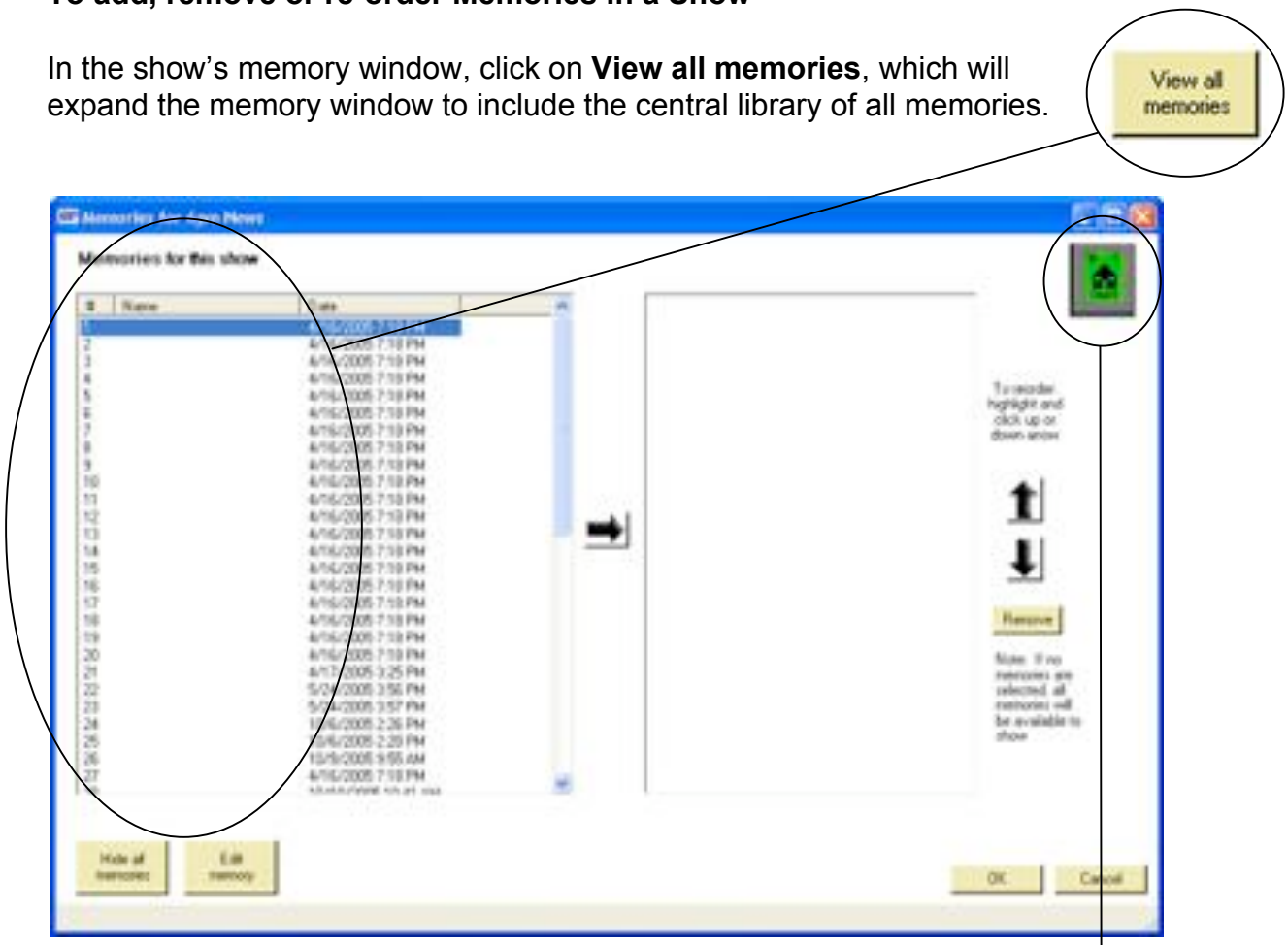
Note: The third item is a global change, affecting all shows, so whatever name and image you choose will be used in all shows for this memory.

To access show memory controls, on the Show Settings window, click on **memories.**

This will open the Memories Window. This example does not contain any memories yet.

To add, remove or re-order Memories in a Show

In the show's memory window, click on **View all memories**, which will expand the memory window to include the central library of all memories.



For moving memories into a show and organizing them, this window works same way as the clip or still content window (see section 3.5). The only difference here is that as you select each memory you can see its PixButton in the upper right corner.

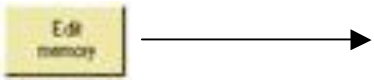
3.9.5 Global Naming of Memories

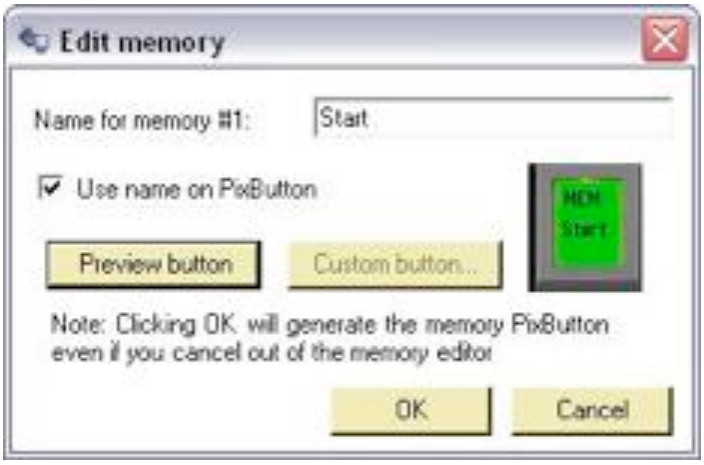
Caution: memory naming is a global function and will affect all memories in all shows. Whatever name and PixButton image you choose will be used on all shows.

To name a memory:

1. Navigate to the expanded Memory window shown on the previous page.

2. Click on **Edit memory.** The Edit Memory window opens.





3. Fill in the name you wish to give the Memory, in the **Name for memory x** field.

4. If you leave the **Use name on PixButton** box checked, the name you entered will be put on the PixButton and displayed as such on the switcher panel.

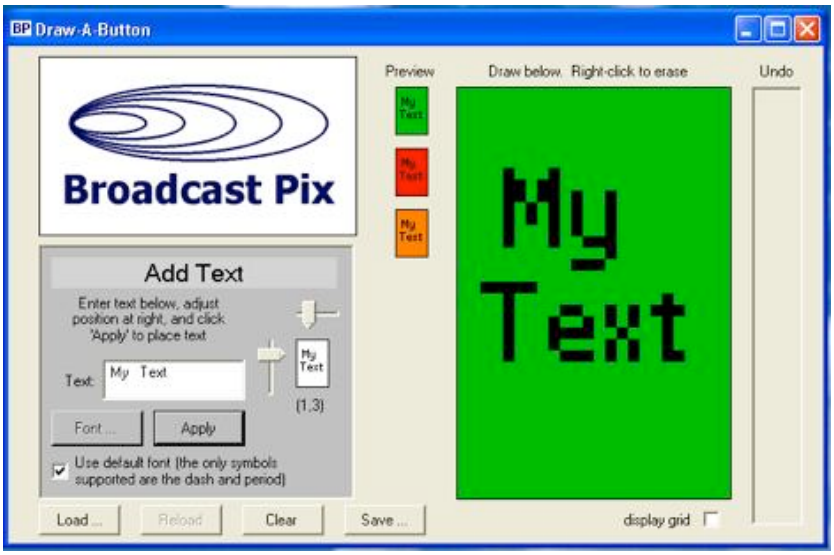
5. Press **OK**. The Memory will now appear with it's name in Memory list for the show.

3.9.6 Custom Images on Memory PixButtons

In the Edit memory window, If you **uncheck** Use name of PixButton, then you can assign a Custom PixButton by clicking on **Custom button**. This will open the 'Choose custom PixButton image' window, where you can navigate to find a custom image created by the Draw PixButton application, as shown below.

To create a custom PixButton image:

1. **Double-Click** the Draw PixButton application, which can be found on the desktop. And the application will launch, as shown below.



2. Enter text to appear on the button in the **Text** field.

3. Position the text with the **2 arrows**, and the position will show in the white preview window. It is recommended to use the default font, if desired you may select another, by un-checking the **Use default font** box.

4. Select **Apply** and the text will appear in the big green window, which represents the PixButton.

5. If desired you may draw custom icons on the button by **left-clicking** with the mouse and dragging. Custom icons may assist in remembering what the memory is comprised of, in a graphical representation.

6. Erase any part of the button by **right clicking**. At any point you may revert to older versions by clicking on an image in the **Undo** section.

7. When done press **Save…** button. It is recommended to save all your custom icons in one folder on the C Drive.

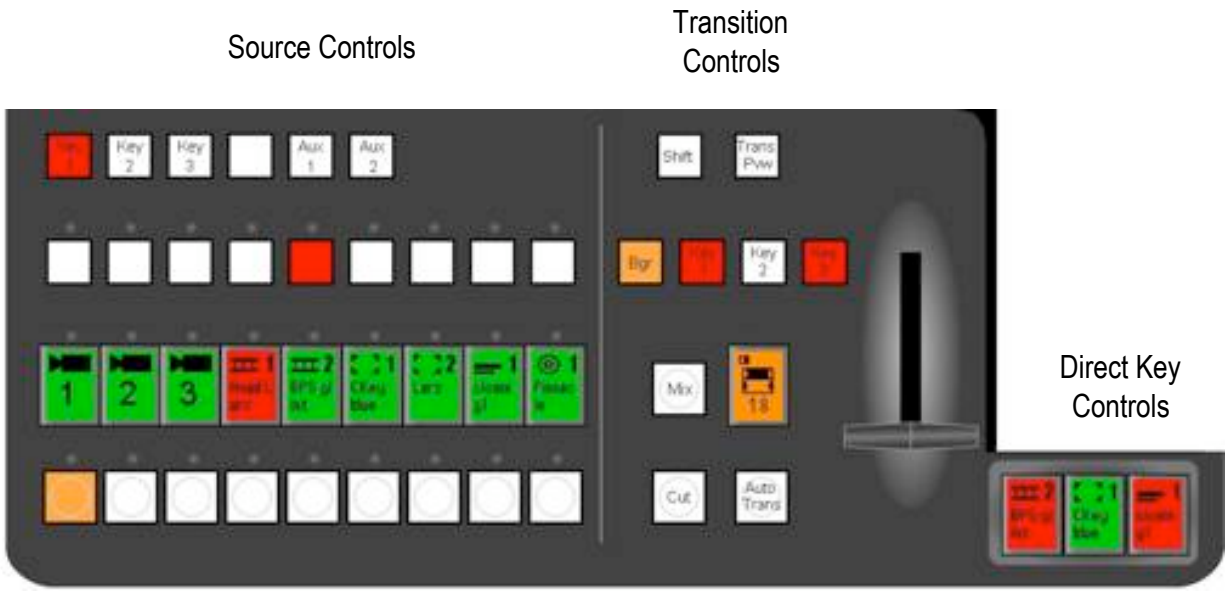
NOTE: Some examples of custom memory PixButtons are shown in the sample show, see section 1.6.1

Section 4:
Digital Production Switcher

The Broadcast Pix Slate system contains a powerful production switcher. The switcher's operation is described in this section, including sources, transitions, keyers and fail-safe operation. Operation works the same way from either a physical control panel or a SoftPanel. Many switching functions can also be run from the Multi-View, see section 2.5.6.

4.0 Switcher Controls

When you launch Broadcast Pix Switcher and a show is loaded (see section 1.9.1), the switcher controls fill in on the panel as shown below.



Source Controls	To select sources for bringing on-air, as backgrounds or key overlays. And for filling keys and auxiliary outputs
Transition Controls	To change what is on program, with a cut, mix or effect.
Direct Key Controls	To manually turn keys On/Off. They also show key status: device, element and tally

4.0.1 Tally

Broadcast Pix uses tally to identify at a glance what has been selected. Tally is displayed simultaneously on the panel and on the Multi-View. On the Slate 2100 tally signals are sent out of the iBoB to light the tally lights on cameras. The Slate 100 and 1000 have an optional tally box.

Panel Tally

State	Color	Buttons	PixButtons
Selected and on Program	Red		
Selected and on Preview	Orange		
Off/not selected	White (buttons) Green (PixButtons)		

Multi-View Tally

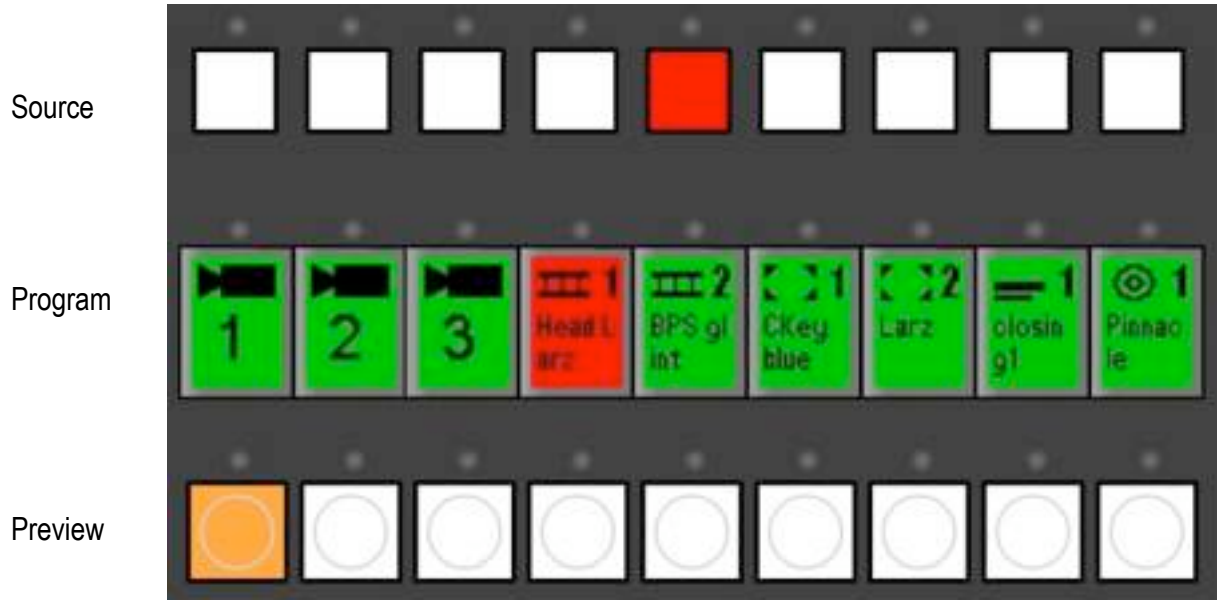
Selected and on Program	Red	
Selected and on Preview	Orange	
Off/not selected	Grey/None	

4.1 Video Sources

Video sources include external video sources, plus internal video sources for Clips, Stills, CG graphics, Logos and Black.

The 9 most active video sources are selected with the three rows of 9 buttons in the lower left portion of the control panel, as illustrated below. These 9 sources are arrayed in columns of 3 buttons each. The same source is assigned to all three buttons in each column. The displays on the PixButtons in the program row indicate what source and content element is currently assigned to that column of buttons.

Within any one row, only one source may be selected at once. Therefore, only one button in the source or preview rows may be illuminated, and only one in the program row may be illuminated red.



Program Row

Indicates which source is on the air, which will always be illuminated red. Other available sources will be illuminated green, and buttons with no video source assigned will not be illuminated.

The PixButtons used in this row indicate the contents of the source, including what device is currently assigned, as well as the currently selected content element on the device. For example, in the above illustration the on-air source is the first channel of clip store, which has an the active clip called "Head Larz".

Preview Row
The preview row is used to select which source is selected on preview

Source Row
The source row is used to select which source is used to fill a key, or an auxiliary output.

4.1.1 Program Row Source Selection (for Shortcut Switching)

In addition to displaying information, the Program row also provides a shortcut for changing sources on the air without first previewing them.

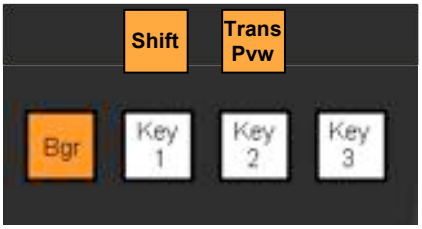
To change an on-air source without using preview:

1. Press the **[Program PixButton]** on the program row and it will Illuminate red, and the selected source will appear on air, and its button will turn red (This shortcut is fast but more prone to error than using preview, so preview is usually used)

4.1.2 Accessing Inputs 9-18 with Shift

The shift button is used to access sources 10-18. This enables the Broadcast Pix panel to control twice as many sources as there are buttons for. These “shifted sources” are typically used for sources that are used less frequently than the first 9 sources, such as black or a rarely used extra tape deck.

To access a source in the 10-18 range on the Control Panel or SoftPanel:



1. Press the **[Shift]** button, and it will illuminate, and the source displays on the program row will change to the names of sources 10-18.

2. Select a **[Source]** from the program, preview or source rows, as desired**.** The selected button will illuminate. To indicate that this button is in a shifted state, on the SoftPanel a small light above it will illuminate, while on the Control panel the button will blink.

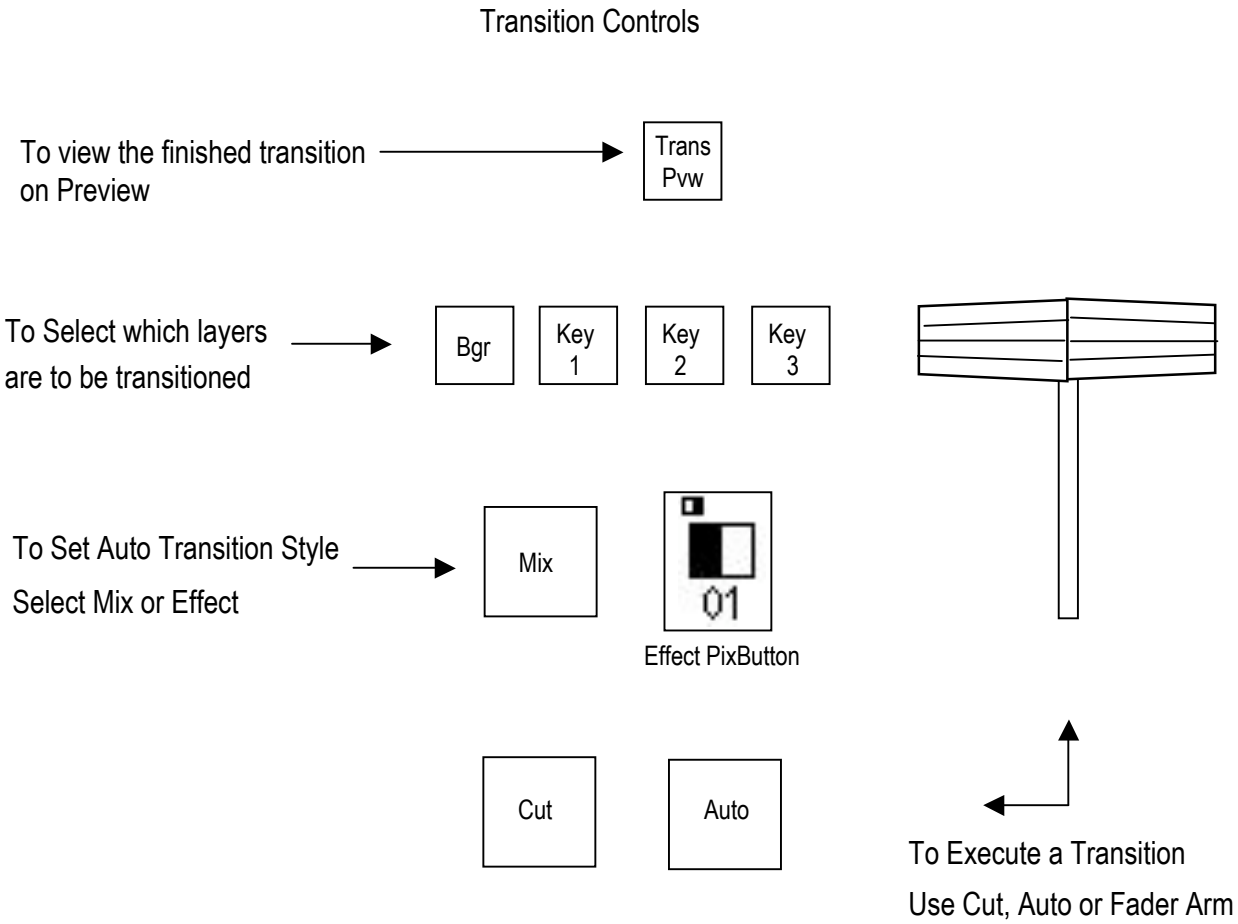
3. Press the **[Shift]** button again, which will turn off the illumination of the shift button, and return all source buttons to their unshifted state except the selected button. The Control panel blinking and the small light on the SoftPanel will stay on so you know a shifted source has been selected.

4.2 Transitions

A transition is a change from one picture to another picture. There are three types of transitions:

- Cut A cut is an instantaneous switch from one video picture to another, and is by far the most common type of transition.
- Mix A mix, also known as a fade or a dissolve, is a transition in which one picture dissolves into the next.
- Effect An effect is a transition that uses a pattern or special effect to transition from one picture to the next. Effects include wipes and 2D DVE moves

The transition section of the control panel manages all transitions. It is illustrated below, along with the function of each area of its controls

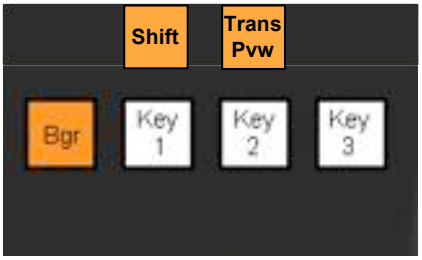


4.2.1 Transition Preview

Transition Preview shows the end state of the transition to be previewed on the Preview Monitor. This is useful when you have keyers on-air, and want to keep them on-air or take them off-air. The Transition Preview button acts as a reminder, notifying you exactly what layers will be on air in the next transition. It can also be used to frame your shots in the preview monitor, just in case a keyer or graphic is covering up something important in your shot.

To preview the end state of a transition:

1. Press the **[Trans Pvw]** button, in the transition section of the switcher, (if [Bgr] is off this will happen automatically).
   It will illuminate orange, and on the preview monitor you will see the end state of the transition, with the appropriate background and keys. This end state that you see in the preview monitor is what the end state of the transition will look like on program when you execute it (with cut, auto or the fader arm).



   When you execute the transition by pressing **[Cut], [Auto Trans]** or using the manual **[Fader Arm]**, the Transition Preview button will remain on. To turn off this function you can press the **[Trans Pvw]** and the orange light will go off.

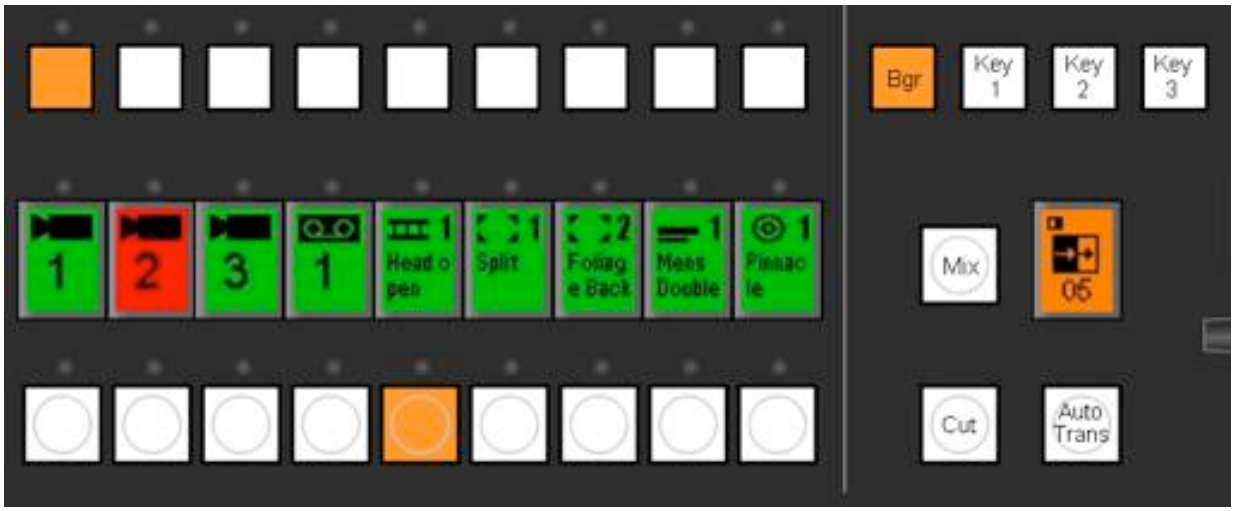
4.2.2 Background Cut Transition

A cut is a ‘hard’ transition that instantaneously switches from one video picture to another.

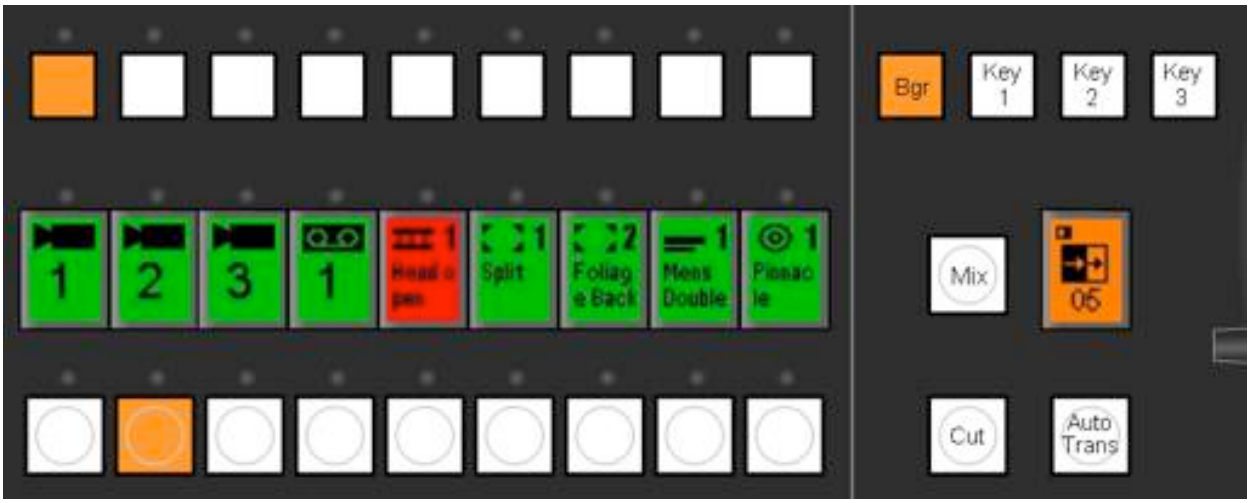
To perform a cut:

1. The background transition button must be on and illuminated. If it is not already on, press **[BGR]** and it will illuminate orange

2. On the preview row, select the source you wish to cut to by pressing its **[Source]** button on the preview row. The button will light orange, and the selected source to be displayed in the preview monitor. The clip store is on preview and Cam 2 on program, in this example:



3. Press the **[CUT]** transition button. This will bring the selected source to program, and whatever was on program to the preview monitor. The illuminated buttons will also “flip-flop” in the program and preview rows, as shown:



4.2.3 Background Mix Transition

A mix is a 'soft' transition that bends or dissolves between two images, usually at a slower rate.

To perform a Mix:

1. The background transition button must be on (illuminated). If it is not already on, press **[BGR]**, and it will illuminate orange.

2. On the preview bus, select the source you wish to cut to by pressing its **[Source]** button on the preview row. The button will light orange, and the selected source is displayed in the preview monitor.

3. Press the **[MIX]** button, which will illuminate orange, and the effects PixButton to the right of it will change from orange to green. (Unless you have already left the mix button on from a previous transition. It will stay on until you turn it off by pressing the effects PixButton.)

4. Press the **[Auto Trans]** button. This will bring the selected source to program, and whatever was on program to the preview monitor. The illuminated buttons will also flip-flop on the program and preview rows. During the transition, the color of both the Auto and Preview Source buttons will change from orange to red. You can change the rate at which the mix occurs, as described in the rates section, see section 4.3.4.

   If you wish to execute a manual mix, then instead of pressing the **[Auto Trans]** button, use the **Fader Arm** instead.

4.2.4 Background Effects Transition

To execute an Effect transition, including wipes and DVE effects:

1. The background transition button must be on (illuminated). If it is not already on, press **[BGR]**, and it will illuminate orange.

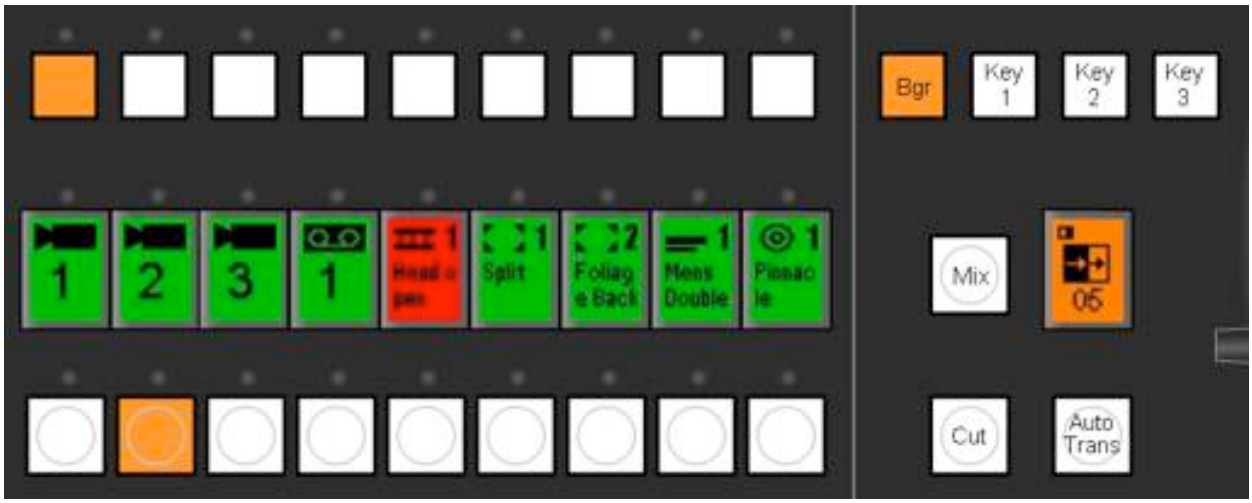
2. On the preview row, select the source you wish to cut to by pressing its **[Source]** button on the preview row. The button will light, and the selected source to be displayed in the preview monitor.

3. Press the **[Effects PixButton],** which will illuminate orange. (Unless you have already left the effects button on from a previous transition.) It will stay on until you turn it off by pressing the mix button. When the effects PixButton is pressed, the Device Controls will change to effect, including the PixPad, knobs and joystick.

   The effect that is currently selected, and ready to execute, is shown in the effects PixButton in the transition section, its corresponding button in the PixPad is also illuminated orange, and its name is shown in the display.

4. Press the **[Auto Trans]** button. This will bring the selected source to program using the selected transition style, and whatever was on program to the preview monitor. The illuminated buttons will also flip-flop on the program and preview rows. During the transition, the color of both the Auto and Preview Source buttons will change from orange to red. You can change the rate at which the mix occurs, as described in the rates section, see section 4.3.4.

   If you wish to execute a manual effect, then instead of pressing the **[Auto Trans]** button, use the **Fader Arm**.

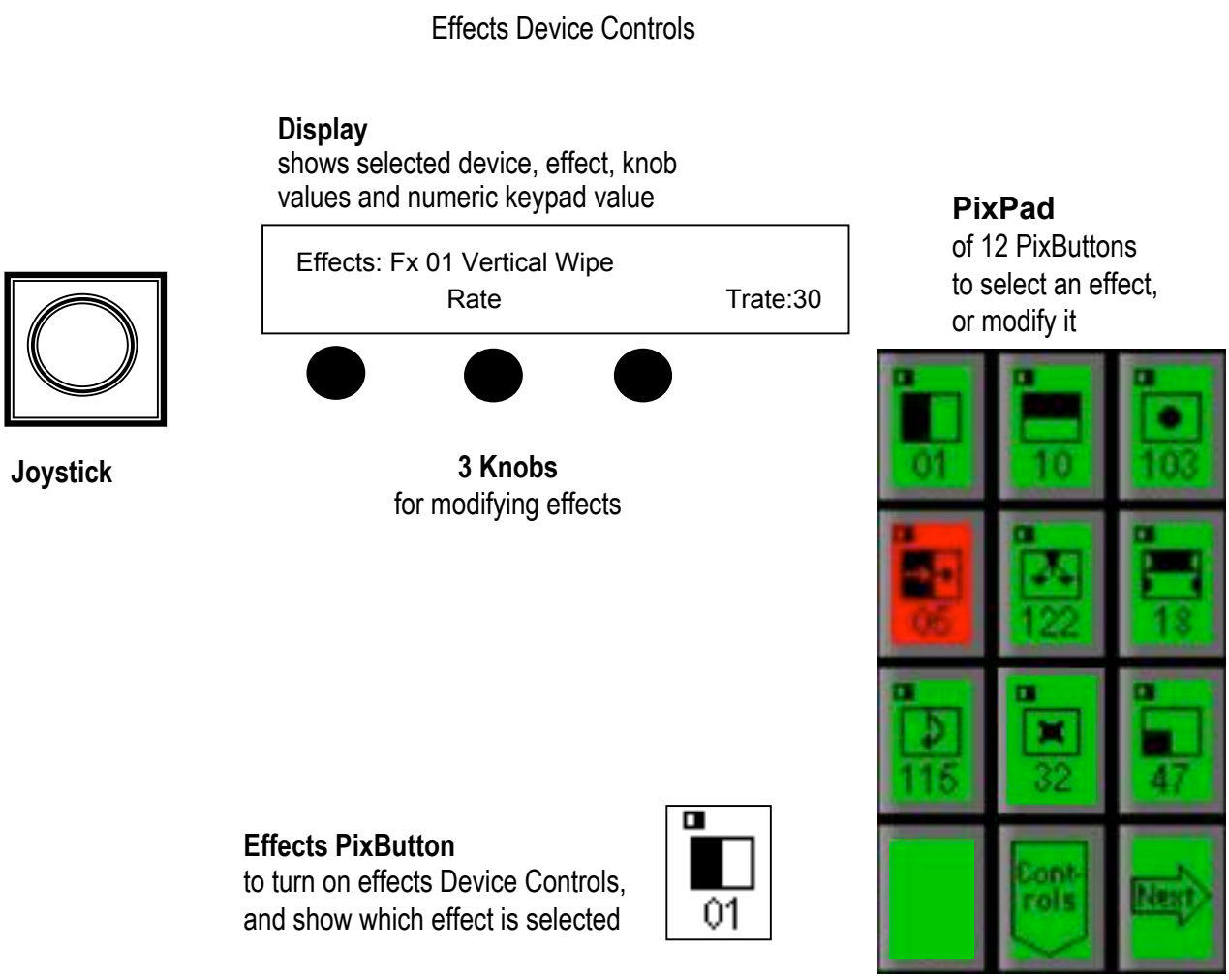


4.3 Transition Effects

The Transition section will execute whichever transition is currently selected, as shown both on the effects PixButton, and on the display. If you wish to select a different effect, or modify an effect, then use the effect device controls.

To select a different Effect:

1. Assign the device controls to effects by pressing the **[Effect PixButton].** This will cause the following device controls to appear:



2. On the PixPad, press the desired **[Effect Pattern]** PixButton, and it will illuminate and the previously selected effect will turn to green. This will also change the selected effect shown in the display and on the [Effects PixButton].

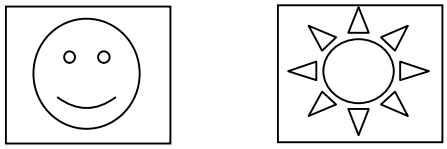
4.3.1 Effects Styles and PixButtons

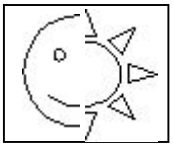
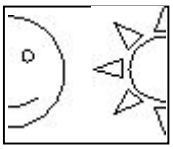
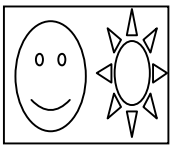
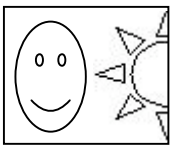
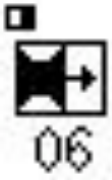
The Broadcast Pix Switcher has over 150 effects. Each effect has a unique number, name and PixButton icon image. The PixButton icons are intended to show the effect style at a glance. The conventions used for these PixButtons are:

Black shows the foreground, while the background video is blank. For example, in the horizontal wipe, the new foreground enters from the left. (It can also be reversed, see section 4.3.5).

Three Styles of Movement

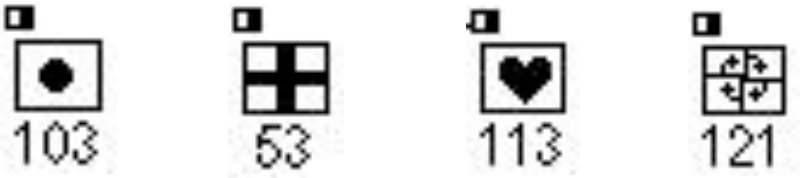
The Broadcast Pix Switcher supports three basic types of movement: wipe, push and squeeze. Each has its own style PixButton icon. For example, if there was currently a picture of the sun on-air (background), and you wish to transition to a person (foreground).



		Example	PixButton
1. Wipe	Both Images stay in place, and one is wiped over the other		
2. Push	One or both of the images are moved, as being pushed off-air, or pushed on-air		
3. Squeeze	One or both of the images are squeezed from their current position to an edge.		
Combine	The three styles may be combined. For example, Fx 6 squeezes on the foreground, while pushing off the background.		

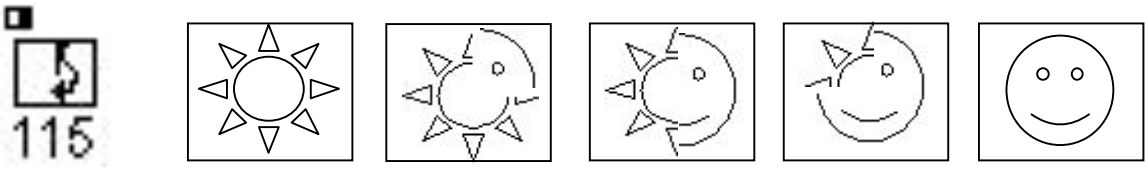
Gradient Wipes

Gradient wipes enable a soft-edge to be applied, as described in section 4.3.5. In addition, many gradient wipes have a pattern, which can be positioned, as also described in section 4.3.5. Some of the many gradient wipes are:



Clock Wipes and Arcs

Many of the wipe patterns are circular clock wipes, which start in one position and then move in a circle. Their icons show a black region where the foreground begins to enter, and then a curved or diagonal arrow with the direction of the clock movement. For example, clock wipe Fx 115 has the following icon, and creates the illustrated effect:

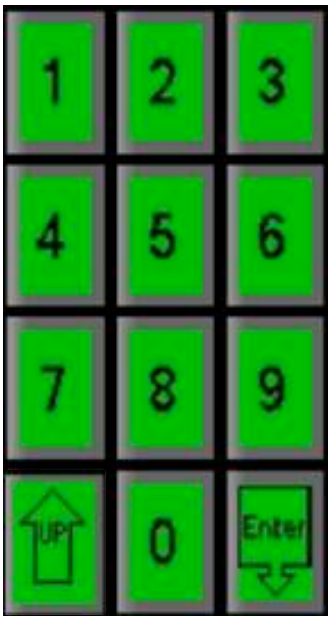


Fx 121 shown above is both a gradient wipe and a clock wipe, as all clock wipes are also gradient wipes. An arc wipe is similar to a clock wipe, except that the movement is in a much wider arc, in which the center of movement is off the picture, rather than in the middle of the picture as in most clock wipes.

4.3.2 Selecting a New Effect by Number

1. On the Effects PixPad, press the **[Controls PixButton]**, which will bring up the effects controls PixPad

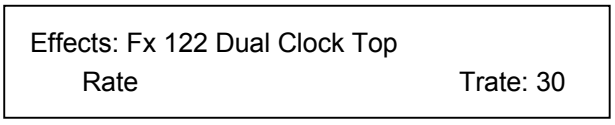
2. Press the **[numeric keypad]** PixButton, and the PixPad will change to the following numeric keypad:



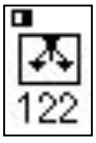
3. Enter the effect **[Number]** you wish using the numeric keypad. As you enter each number it will appear in the display.

   If you enter a wrong number press the **[UP]** PixButton, which will bring back to the previous PixPad, where you can start again from step #2.

4. Press the **[Enter]** PixButton and the effect will appear in the [Effects PixButton], and its name and number will also appear in the display. The PixPad will change to the effect chosen, and it will be illuminated.



Effects
PixButton



4.3.3 Viewing More Effects in the Library

The effects PixPad displays the first 9 effects.

To view additional effects, either:

Press the **[Next]** PixButton**,** and the next 9 will appear.

To see the 9 beyond that press the **[Next]** PixButton again, etc.

To back up and look at the previous PixPad, press the **[Back]** PixButton

NOTE: You can always return to the first page of effects, by pressing the [Effects PixButton] again.

4.3.4 Changing Effect Transition Rates

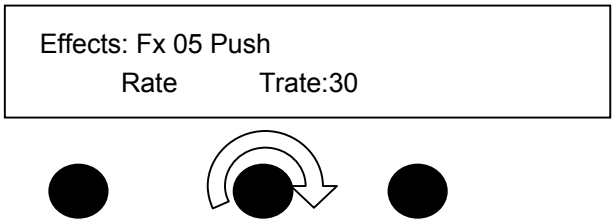
The transition rate of any effect or mix may be changed by either turning the Rate knob, or using the numeric keypad.

The transition rate is displayed on the lower right corner of the display. For example, the previous illustration shows a rate of 30 frames. Rates are displayed in frames, with 30 frames being equal to one second in NTSC/525, and 25 being equal to one second in PAL/625. The system defaults to 30 frames until another rate is selected.

To change the transition rate with a knob:

1. If the Device Controls are not already assigned to effects, press the **[Effects PixButton]** in the transition section, and the display illustrated below will appear.

2. Turn the **[Center knob]** on the to the desired rate. The number of frames will be shown. This rate will be now be used for all transitions, until changed, or until the system is powered down, or until a new show is loaded.



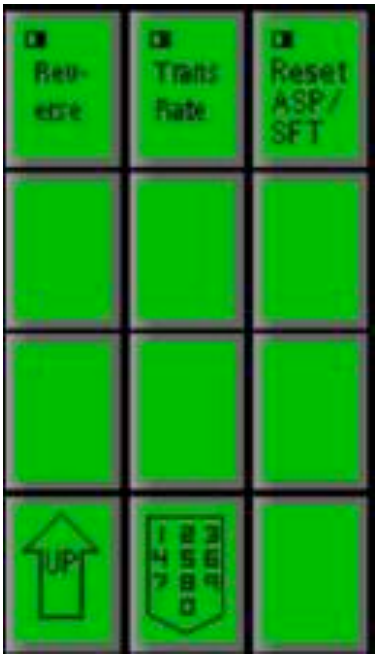
Multi-View Rate Displays

The Multi-View always shows you the rates set for Transitions :

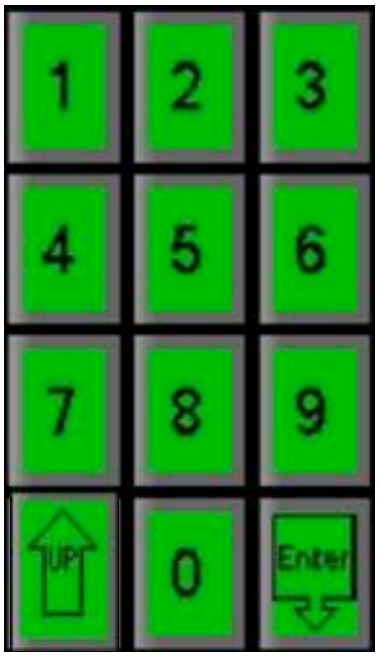
To change the transition rate with the numeric keypad:

1. If the Device Controls are not already assigned to effects, press the **[EffectsPixButton]**.

2. Press the **[Controls]** button on the effects PixPad, and the following PixPad will appear:



3. Press the **[Trans Rate]** PixButton, and the following numeric keypad will appear:



4. Enter the rate **[Number]** you wish using the numeric keypad. As you enter each number it will appear in the display.

   If you enter a wrong number press the [Clear] PixButton, and with each press you will back up one step.

5. Press the **[Enter]** PixButton and the rate will appear in the display, and the PixPad will revert to PixPad containing the selected effect.

NOTE: You can also change the Auto Transition Rate by pressing the **[Mix]** button, which will bring up a numeric PixPad.

4.3.5 Modifying an Effect

Gradient effects that use a pattern, such a circle, star, pinwheel etc. can be modified for softness and aspect. All effects can also be reversed.

To modify an effect:

1. The Device Controls must be assigned to effects, if they are not, press the **[Effects PixButton]** in the transition section.

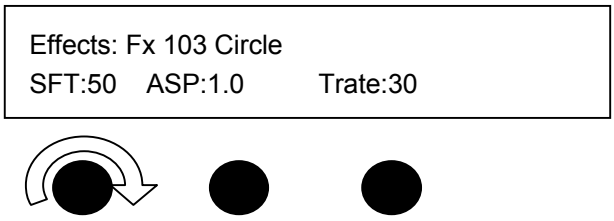
2. The background transition button must be on (illuminated). If it is not already on, press **[BGR]**, and it will illuminate orange.

3. Select the effect you want with either the numeric keypad or one of the **[Effect Pattern]** PixButtons.

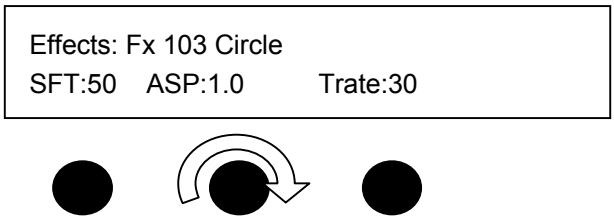
4. Click the **[Controls]** PixButton for a selected transition to modify the softness, aspect and transition rates.

5. Take your transition to program. There is no way to preview a transition effect, without taking to program. It may be advised to modify an effect in pre-production and then save the modifications using a memory.

6. To change the softness of the edge of an gradient wipe effect, turn the **[Left Knob].**



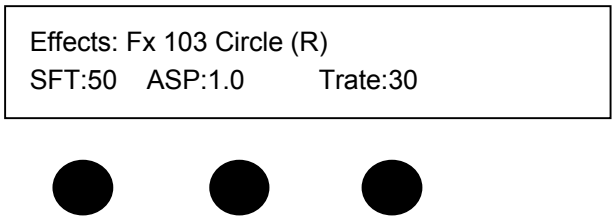
7. To change the Aspect ratio of a gradient wipe, turn the **[Center Knob]**.



8. To Reverse the direction of all effects, on the Effects PixPad press the **[Controls]** PixButton, then press the **[Reverse]** PixButton.

   Now all effects will execute in the reverse direction. A left Push-off will become a right push-off, a circle wipe that starts in the center and goes out, will now start on the outside and go to the center, etc.

   To indicate that Reverse has been selected, the letter (R) will be appended to every effect name in the display, as shown below:

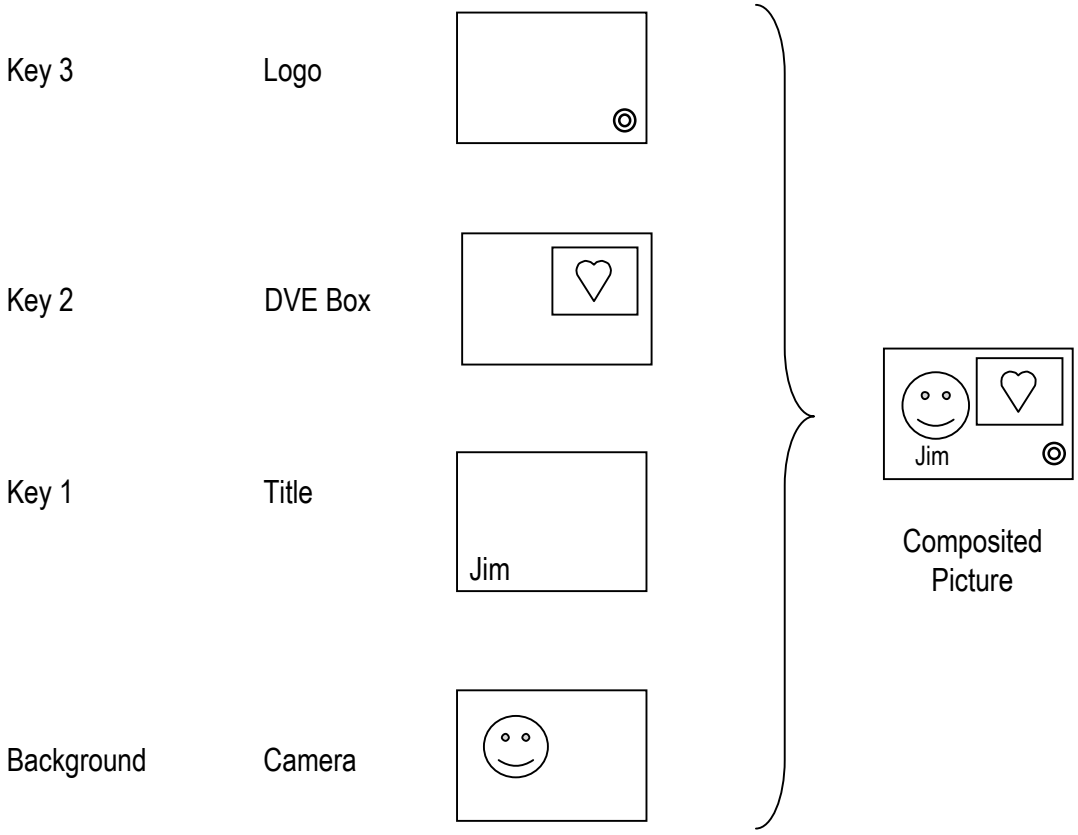


   To remove reverse and return to the normal state, press the **[Reverse]** PixButton again, and the (R) in the display will be removed.

4.4 Keys

The Broadcast Pix switcher combines multi-layer pictures that can include a background video image (such as a camera), clip or full page graphic and up to six overlays (3 standard and 6 as an option), each of which is known as a key, plus a seventh key downstream in the iBoB. Each of the first 6 keys can hold a graphic, such as a title or logo, or a DVE box (Picture-in-Picture) which can hold a camera, still, clip or any other source. One key can hold a Chromakey, and as an option a total of 8 sources can have Chromakey controls.

For example a desired picture may have four layers:



4.4.1 Key Controls

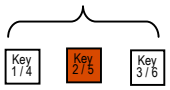
The Broadcast Pix panel provides three groups of buttons for controlling the first 3 keys: Key Select Buttons, Key Transition Buttons and Direct Key Buttons. The Source Row is also used with the Key Select Buttons.

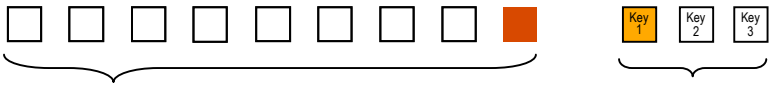
Each of the 3 Keyers is treated as a device, so pressing any one of the three Key Select buttons assigns all of the device controls to that Key, including: Joystick, 3 knobs, PixPad with 12 PixButtons in the PixPad, and the Display.

Key 1-6 Controls

Key Select Buttons

For assigning the Device Controls to a Key
and for use with the Sources Row to change which device is assigned to a Key





Source Row

For use with the Key Select Buttons to change which device is assigned to a key

Key Transition Buttons

For including keys in transitions
Also previews a key

Direct Key Buttons

Displays the key content and tally
Manually turn keys on and off

The first three keys are also shown graphically and in full motion on the Multi-View,
Keys 4-6 are indicated with their name.
All Keys can be turned on and off by clicking on them.

4.4.2 Assigning a Source to Key 1-3

Each of the three keys may hold a variety of sources, including a cg, logo, still, a DVE box (picture-in-picture window) for camera, etc. Each source is assigned to Key 1, 2 and 3 by using the Key Selection and Source Row controls

To assign a source to a Keyer:

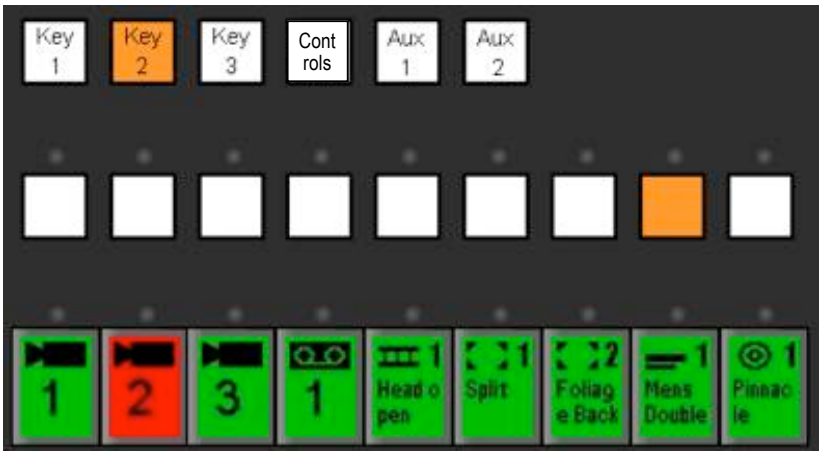
1. Press the desired Key Selection Button, either **[Key 1 Select]** , **[Key 2 Select]** or **[Key 3 Select]**. (If it is already illuminated, then skip this step.) The button pressed will illuminate orange (or red if the key is on program), and one button in the source row will also illuminate. This lit button in the source row will indicate which source is currently assigned to the selected key. For example, in the illustration shown below, the CG device is fed into Key 2. (The source row buttons are always the same devices as in the program and preview rows, and so you can see the name of the source by looking at the device icon on the top of the PixButtons in the program row).

   The lit source button will illuminate red if this key is on program. This will warn you that if you now change to a different source you will be impacting the on-air content. The lit source button will illuminate orange if this key is not on air. If a shifted source (10-18) is currently in the key, it will blink on the Control panel, and illuminate a small light above the button on the SoftPanel.

Key Select Buttons in the Destination Row

Source Row

Program Row



2. Press the desired **[Source Row]** button, for the source you wish to feed into the keyer. The button pressed will illuminate orange (or red if the key is on program), and the source row button that had been illuminated before will go out.
   Only one button in the source row may be illuminated at once. The new source, and its current contents, will also appear in the appropriate [Key PixButton] in the lower right corner of the panel. For example, in the illustration shown above, to change Key 2 from CG to Logo, press Logo in the source row (the last button).

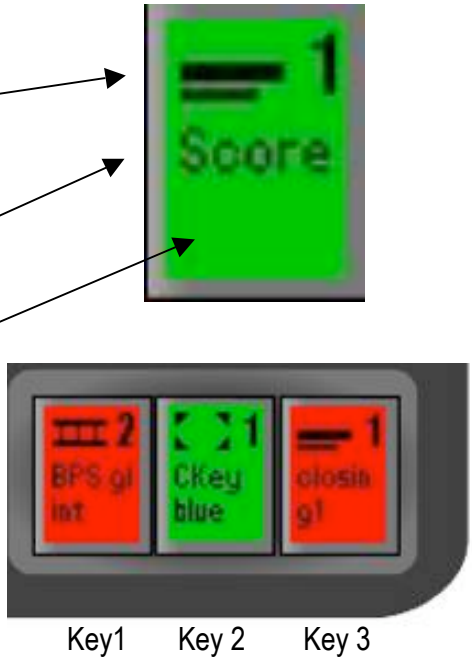
4.4.3 Direct Key Controls

There are two ways to bring Keys on and off program: by using the Transition Controls, or by using the Direct Key buttons. The Direct Key buttons are the three buttons located in the lower right corner of the control panel. They correspond to Key 1, 2 and 3, as shown below. In addition to On/Off functionality, these three buttons provide a handy place to always see key status, including:

What Device is assigned to this keyer is shown by the icon (e.g. CG Channel 1)

What is the name of the content element currently selected in the device (e.g. Score)

Whether the Key is
On Program: Red
On Preview: Orange
Assigned/Selected: Green (in this case)



Key1 Key 2 Key 3

4.4.4 Transitioning Keys Individually with PixButtons

To Manually Bring a Key On Program:

1. Any key that is off (green or orange), can be brought on program by pressing its **[Direct Key Button]** in the bottom right corner of the panel. This will cause this key (such as the still in key 2 in the above example) to fade on at the rate for that keyer, and the button will change color to red.

To Manually Take a Key Off Program:

1. Any key that is on-air (red), can be taken off program by pressing its **[Direct Key Button]** in the bottom right corner of the panel. This will cause this key (such as the title in key 3 in the above example) to fade off at the rate for that keyer, and the button will change color, from red to green (or orange if its key transition button is on).

Keys may also be transitioned from the Multi-View, see section 2.5.4

NOTE: If the rate for a Key on the control panel display is set to 1, the Key will cut on/off program. To change the Key rate see section 4.4.7

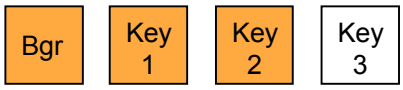
4.4.5 Transitioning Keys with Other Keys or with the Background

Three of the six keys can used with the transition controls. This enables key transitions to be combined with background transitions. This also enables any effects, such as a wipe or push-off, to be used for transitioning keys, either with a background change or without a background change.

Changing a Key with a Video Background Change:

To add or subtract layers simultaneously with a change to the background video:

1. Press the **[BGR]** button (if it is not already illuminated)
2. Select the keys to transition with the background by pressing one or more of the adjacent **[Key Transition]** buttons. Each button pressed will illuminate orange (or red if the key is already on program). As each Key Transition button is pressed, the Key content will appear as an addition to the preview monitor. For example, to transition on program Key1 and Key2 along with a background change, press:

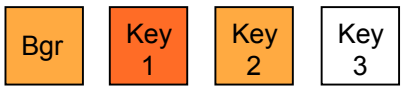


   As each of the above [Key Transition] buttons is pressed, its corresponding [Direct Key button] in the lower right corner of the panel will change from green to orange.

3. Press **[Cut]** (or Auto, or use the fader arm) and the background video will change, the illuminated keys will come on program, and their [Direct Key buttons] in the lower right corner of the panel will change illumination from orange to red.

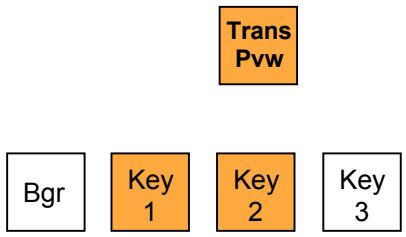
In the above example, two keys were brought on program. If instead the keys are already on before the transition, and you wish to bring them off program as part of a transition, then the button illumination would be as follows. When their [Key Transition] button is pressed it will illuminate red, to indicate on-air keys. The corresponding [Direct Key Button] will stay red. Now when cut (or auto or the fader) is pressed, the Key 1 and 2 will come off program as the background video changes, and the [Direct Key1 Button] and [Direct Key 2 Button] will change from red to orange.

You may combine bringing keys on and off program in the same transition. For example, if Key 1 is already on, and you wish to bring it off with a background transition, while bringing on Key 2, the illumination of the [Key Transition] buttons would be:



Changing a Key without a Video Background Change

To add or subtract key layers without changing the background video, repeat all of the above steps, except in step one, turn off the **[BGR]** button, as shown below. When [Bgr] is turned off the [Trans Pvw] button will automatically turn on as shown below, and the end state of the transition will be shown on the preview monitor, which will include the same background as currently on program.



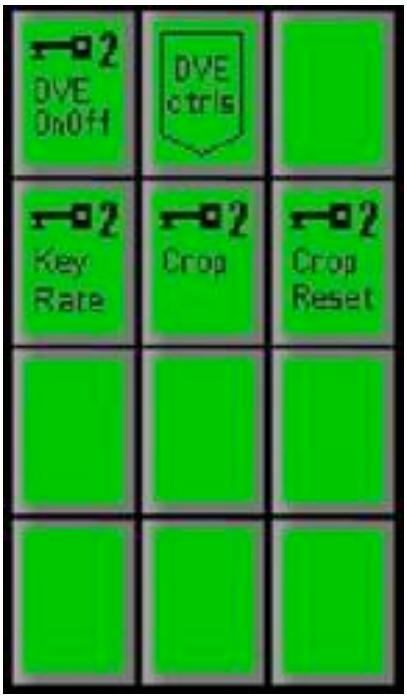
For more on Transition Preview, see section 4.2.1

4.4.6 Modifiers for Keyers

Each Keyer can have several functions applied to it, including the key transition rate, Digital Video Effect (DVE), crop and border.

To access a modifier for a key:

1. Select the desired Key, by pressing the **[Key 1 Select]**, **[Key 2 Select]** or **[Key 3 Select]** button. The PixPad will change, for example the Key 2 PixPad is shown below:



2. The Key may be cropped on any side. Press the **[Crop]** PixButton on the above PixPad and the following knob values will appear as shown below. Twist the **[Left Knob]** for left crop, the **[Center Knob]** to just crop the top, and **[Right Knob]** to change which of the four corners to crop, from LeftTop (shown) to LeftBot, RightTop and RightBot.
   You can reset the cropping to none by pressing the **[Crop Reset]** button.

3. To modify the Key by applying a DVE Box to it, see section 4.5.

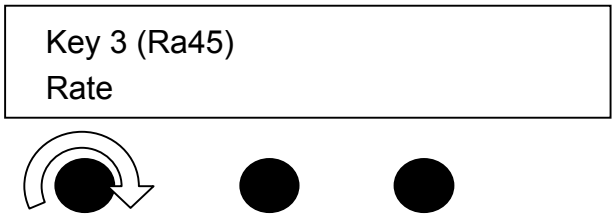
4. To modify the Key by applying a Chromakey to it, see section 4.7.

4.4.7 To Change the Key Fade Rate

The fade rate for all 6 Keys can be set with a knob or the numeric keypad in the PixPad. To change the key fade rate:

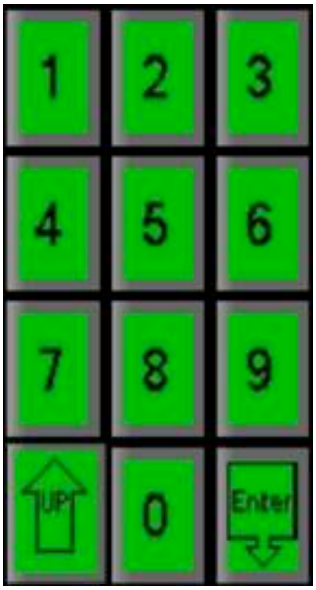
1. Press the **[Key Select]** button for the desired keyer, to assign the Device Controls to that key.

2. Turn the **[left knob]** to the desired transition rate, which will be shown after the letters Ra in the display above the knob.



or

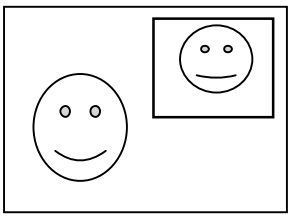
Press the **[Key Rate]** PixButton on the Key PixPad for the desired Key, enter the rate with the **[numeric keypad],** as done for a transition rate, and press **[Enter]** to apply the rate.



4.5 DVE Boxes (Picture in Picture)

All 6 Keyers may have a DVE (Digital Video Effect) Box, otherwise known as a Picture-in-Picture, applied to it. In television news shows, the DVE Box is used extensively for “over-the-shoulder” boxes that may contain a still, clip or another camera.

The DVE Box enables one video or graphic to be placed in a smaller picture on top of the background video.

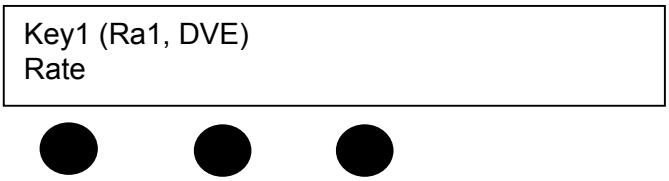


4.5.1 To Create a DVE Box:

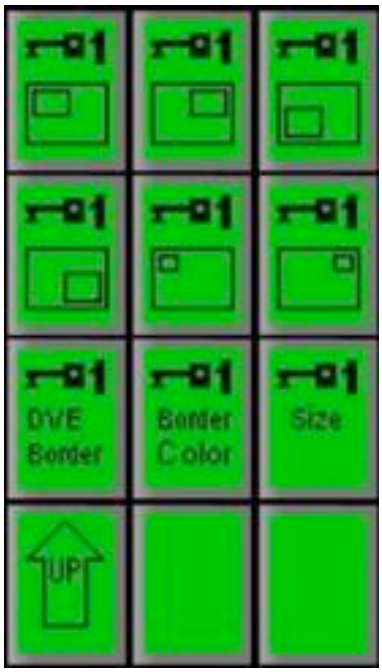
1. Press the Key transition button for the desired keyer, either **[Key 1 Transition], [Key 2 Transition]** or **[Key 3 Transition]** , and it will illuminate orange, and the content of the key will appear on the preview monitor.

2. Select the Keyer you wish to use by pressing either **[Key 1 Select]**, **[Key 2 Select]** or **[Key 3 Select]**. This will assign the Device Controls to the Keyer selected, as described in section 4.4.2.

3. Press the **[DVE OnOff]** PixButton on the PixPad, which will cause the word (DVE) to appear in the display to let you know the DVE is applied, as shown below:



4. Press the **[DVE Controls]** PixButton on the PixPad, which will bring up the following PixPad of controls:



5. Select the desired DVE Box pattern preset by pressing one of the six **[DVE Box Pattern]** PixButtons. The selected DVE Box pattern will appear on the preview monitor.

6. You can change which source you would like to feed into the DVE Box by pressing another **[Source]** button in the source row. When pressed, the content will appear in the DVE Box on the preview monitor.

7. Bring the previewed DVE Box to air by pressing either the **[Cut]** or **[Auto]** buttons, or using the **[Fader Arm],** or you can manually bring the DVE Box to air by pressing its **[Direct Key Button]**

8. To remove/reset the DVE box and return the Keyer to full screen mode, press the **[DVE OnOff]** PixButton.

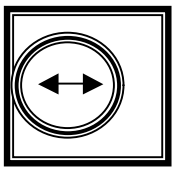
4.5.2 Modifying a DVE Box

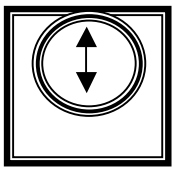
Several parameters of the DVE box can be modified including size, position, crop, border size and border color.

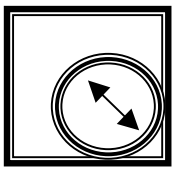
To modify a DVE box:

Get the desired DVE Box on the preview monitor by executing steps 1 through 5 above in section 4.5.1.

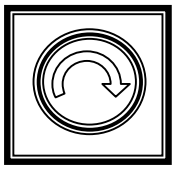
1. The position of the DVE Box may be modified by using the **Joystick**, as follows:

Left - Right 

Up - Down 

Diagonally 

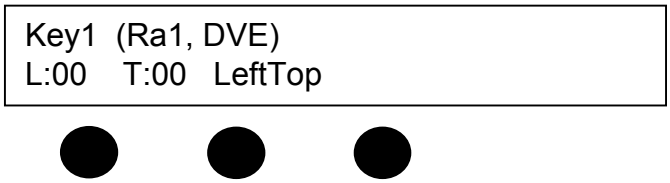
2. The size of the DVE Box may be modified by twisting the **Joystick.**

or 

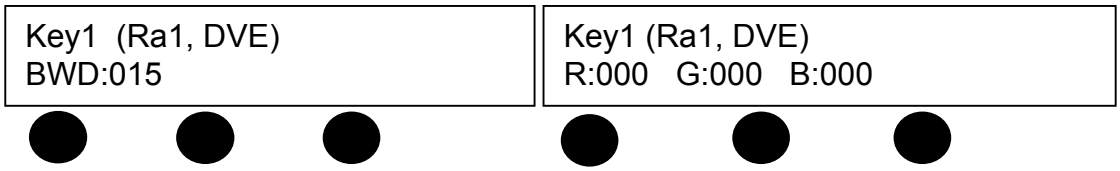
The size may also be changed by pressing the **[Size]** PixButton and then twisting the **[left knob]** for overall size, and the **[center knob]** and **[right knob]** to individually control width and height respectively. The numbers refer to pixels (full screen 4x3 NTSC is 720x486 pixels, and PAL is 720x576).

Key1 (Ra1, DVE)
Size W:270 H:360 Trate:30

4. The DVE Box may be cropped on any side. Press the **[Crop]** PixButton on the Keyer PixPad, and the following knob values will appear as shown below. Then twist the **[Left Knob]** for left crop, the **[Center Knob]** to just crop the top, and **[Right Knob]** to change which of the four corners to crop, from LeftTop (shown) to LeftBot, RightTop and RightBot. You can also reset the cropping by pressing the **[Crop Reset]** PixButton.



5. The edges of a DVE box may also have a simple colored border. To apply a border press the **[DVE Border]** PixButton on the PixPad. The panel display will read a border thickness. Turn the knob to increase/decrease the border thickness. To change the border color, press the **[Color]** PixButton on the PixPad. The panel display will read color values for **R**ed, **G**reen & **B**lue. Turn the corresponding knobs until the desired color is reached.



4.5.3 Multiple DVE Boxes

Two DVE Boxes may be used at once, one on Key 1 and the other on Key 2. This is known as dual boxes, or a “Split-back”, as shown below. To create dual boxes set one of them up on Key 1, as described above, and then set up another on Key 2 in the same way. In the same way six DVE Boxes can also be created by turning the DVE box command on in each of the six keyers.

NOTE: in the above illustration, the two DVE boxes are placed on an animated background that is playing out from the system’s clip store with a crawl placed on the bottom.

4.5.4 Accessing Keys 4-6

Most Broadcast Pix Slate switchers come standard with 3 Keyers, as an option every model can be upgraded to a total of 6 Keyers allowing for 6 picture-in-pictures. Even though Keys 4-6 have the same capabilities as Keys 1-3, as described in section 4.5, they can not be tied to a transition with the transition controls as described in section 4.4.5. The use of StudioMemories, see section 4.10, can assist in easily bringing Keys 4-6 on/off of program. Keys 4-6 are downstream (on top) of Keys 1-3, and due to their somewhat limited capabilities they are intended for more “set and forget” applications, i.e. a logo/station bug, a game clock in a DVE, a scrolling ticker, etc.

To access Keys 4-6:

1. Double-punch the **[Key 1]** Key Select Button. This will activate the Key 4 PixPad Controls, as shown below. The Key 1 button will now be blinking, indicating that Key 4 is active and on a SoftPanel the Key 1 button will turn into a Key 4 button. (To access Key 5 double-punch Key 2, and for Key 6 double-punch Key 3.)

2. You now have the same DVE, rate and cropping controls as described in section 4.4.6.

3. You now can preview the Key by pressing **[Key OnOff Prev]** in the PixPad, or you can take the Key to program by pressing **[Key OnOff Prg].**

4. To take the key off of Preview or Program, repeat step 3.

NOTE: Keys 4-6 will only fade on/off depending on the rate of the key. You can not use a transition effect for Keys 4-6. To change the key rate see section 4.4.7.

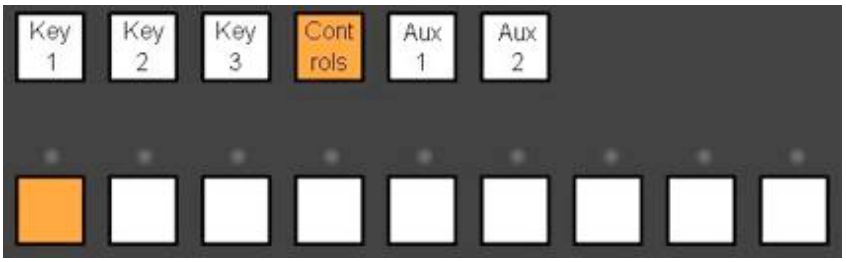
4.6 Source Controls

All Broadcast Pix sources, both external live and internal graphics and clips, have various parameters which can be modified known as Source Controls. For external live sources you can set the AutoAspect treatment, as described in section 1.2.7, as well as chromakey levels. For internal source controls you can also set the AutoAspect treatment, as well as any control that the device has enabled. Source Controls reside on the the actual input, in result wherever that source is outputted to, it will have the associated source controls applied to it.

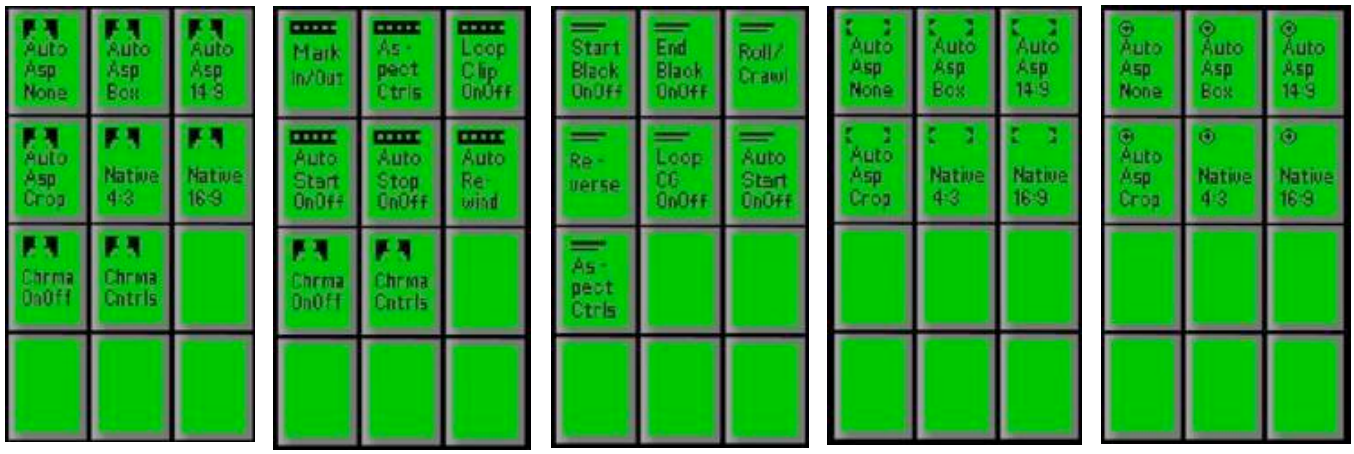
To activate source controls:

1. Select the **[Controls]** button in the Destination Row on the control panel or SoftPanel and it will illuminate. (On older panels, this is the **[Capture]** button)

2. The display will read out which source is selected and the source row will have its button illuminated. To effect/modify another source select any mapped source on the switcher's Source Row.



3. The PixPad will change to show the attributes for source controls, all the external live inputs will have one PixPad, and each internal device will have its own, as shown below. Simply select the controls you wish to modify.



External Live Source *Clip Source* *CG Source* *Still Source* *Logo Source*

4.7 Chromakey

Chromakey is a method of removing a solid background color and replacing it with a different image. The most common application for Chromakey (also called green/blue screen) is in news/weather production, where a person in front of a blue wall or a green wall is taped with video camera, and then using a Chromakey the person is cut out of the image and placed on a different background, such as a weather map.
One Chromakey comes standard with the Broadcast Pix switcher, and as an option 8 sources may have a Chromakey assigned to it, ideal for creating virtual sets. When using a Chromakey, all controls are accessed through the Source Controls PixPad. Also, when a Chromakey is applied to a source, the chromakey will appear everywhere that source is applied to, i.e. program, preview, key, aux , etc.

The most important element to a successful Chromakey is even lighting. Not only do you need to light your subject with standard 3-point lighting (Key, Fill & Back light) it is also important to evenly light your Chromakey wall (the background of the subject). Once that is accomplished you are now ready to use the Chromakey feature.

4.7.1 Activating the Chromakey

1. Place the source which is shooting the subject to be Chromakeyed in a Key by pressing the **[Key Select]** button of that key in the destination row and then the **[source]** button for the desired camera in the source row. This example will assume Key 2 is the desired location. You may Chromakey any external live source, or any clip from within either channel of clipstore.

2. Then bring Key 2 onto preview, by pressing the **[Key 2 Transition]** button.

3. Select the **[Controls]** button, in the destination row of the control panel, and then the appropriate **[source]** button of the source you are keying in the source row, as described in the previous section.

The PixPad will change and show one of the following:

External Live Source

Clip Source

4. Press the **[Chrma OnOff]** button on the above PixPad and the large display will show the letters Chr added to the modifiers in the large display to let you know the Chromakey has been turned on.

5. Press the **[Chrma Cntrls]** button on the above PixPad to bring up the Chromakey controls on the PixPad as shown below. (The [Chrma Cntrls] button will not bring up these controls unless you have turned the Chromakey on, as described in step 4.)

6. To select the default settings for Blue or Green Chromakey select either the **[Key Blue]** or **[Key Green]** in the above PixPad. This will activate the factory settings for either Chromakey, additional adjustments may be needed.

4.7.2 Chromakey Settings

There are a number of Chromakey settings that may be adjusted to give you greater control of your Chromakey. It is important to note that the smallest adjustment can cause a key to look good or bad. All adjustments are controlled though the Key's [Crma ctrls] PixPad, as shown on the previous page.
When creating a Chromakey it is all about creating a wedge of color on the color wheel to generate a matte.

Each Chromakey has these available controls, although Hue and Acceptance Angle are the most important:

Hue **[Hu]**: Position around color wheel of the wedge, the actual color of the Chromakey background. Red = 0 (approximately), Green = 120, Blue = 240

Gain **[Gain]**: Increases the transparency of the key. It can tighten the key around an object at the cost of making the edges harder. (0 to 100)

Acceptance Angle **[AcAn]**: Size of the wedge on the color wheel, in degrees. Outside of the acceptance angle is opaque, within has increasing transparency as you approach the exact hue. The wider the angle the more colors are accepted as transparent. (0 to 180)

Clip **[Clp]:** Represents offset of the wedge of the color being selected. Negative (-) towards higher saturation, positive (+) towards opposite side of the color wheel. Useful when dark objects are becoming fully transparent from a small amount of reflected green. (-100 to 100)

Shrink **[Shr]**: Shrinks the key around the object based on the shape of the object. Good for tightening the key around hair. If it is overdone it can also give a harsh edge. Useful as a finishing step, but won't help if there is not a good set of base parameters. (0 to 100)

Spill Suppression **[Spil]**: Spill suppression subtracts a color value from places from the Chromakey source where the matte is not totally opaque or transparent. So instead of a green fringe, there is a black one, for example. (0 to 100)

Suppression Angle **[SuAn]**: A 2nd wedge that can be generated that has a hard edge instead of the soft edge. (0 tp 180)

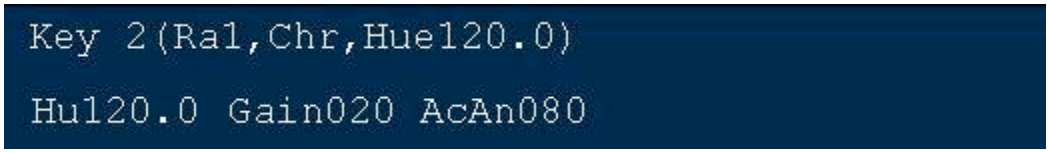
Suppression Clip **[SCl]**: Same as Clip, but for a hard edge mask. (-100 to -5)

4.7.3 Adjusting the Chromakey

1. Press the **[Hue Gain Acc]** PixButton in the [Crma ctrls] PixPad.

2. Adjust the **Hue** value to the color of your Chroma wall by turning the knob under the Hue display. You will notice the color you are keying out in the key window on the Multi-View.

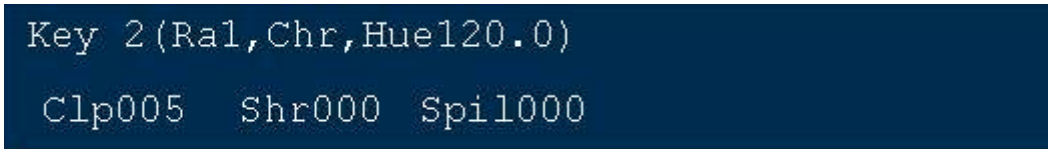
3. Adjust the **Gain** value to around 20, which will key out most of the background.



4. Adjust the **AcAn** value until the colored edge around your subject is mostly keyed out.

5. Press the **[Clip Shrink Spill]** PixButton in the [Crma ctrls] PixPad.

6. Adjust the **Clp** value, to reduce the amount of your background that is remaining. This value should be around 0 plus or minus a few degrees. Too much clip will cause your subject to be transparent.



7. If needed, you may shrink the edges of your subject by adjusting the **Shr** value.

8. Adjust the **Spil** value to a desired effect, too much spill will give a dark outline on your subject.

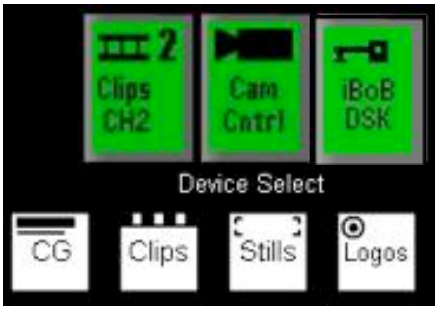
9. Adjust the remaining settings, if needed, by pressing the **[Sup S Clip]** PixButton, to fine tune the key to eliminate any further spill of the the background that may be on your subject.

4.8 iBoB Downstream Keyer (DSK) in the iBoB on the Slate 2100

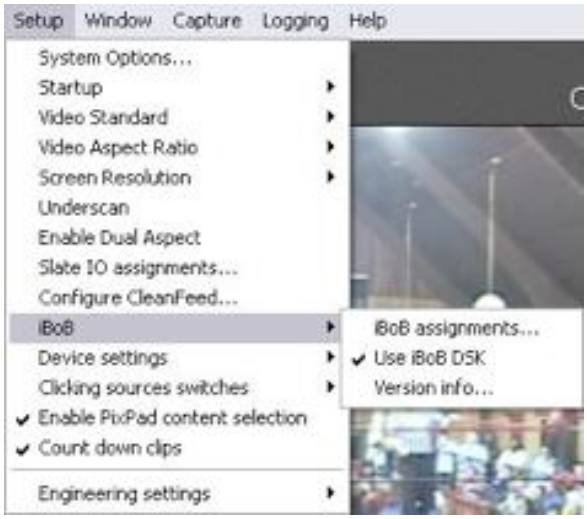
The Broadcast Pix Slate 2100 includes 3-6 keyers in the Mix/Effects system inside the workstation as well as a seventh keyer downstream in the intelligent Break-out-Box (iBoB). The first six keyers handle graphics and clips from within the system's workstation, whereas iBoB DSK is for an external key source that is attached to the iBoB, such as a legacy CG or other external device. iBoB DSK always appears on top (downstream) of everything.

4.8.1 To Enable or Disable iBoB

When it is on, iBoB DSK uses the top right wildcard device selection PixButton, in the top right corner of the display, which will be illuminated with iBoB DSK, as shown below:



If you have a show where you would rather use this wildcard button for another device, then you can disable iBoB DSK by going to the Broadcast Pix Switcher application and clicking on the **Setup** menu, select iBoB, and then uncheck **Use iBoB DSK.**



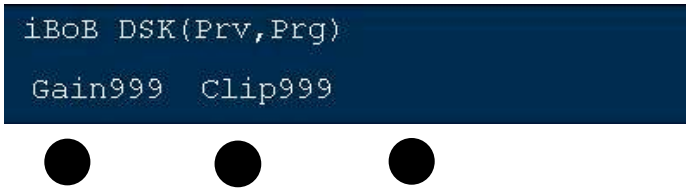
NOTE: iBoB DSK will not be seen on the Multi-View or any Slate output, since the layering occurs after the internal processing. It is recommended to use a standard monitor for preview and program to view your iBoB DSK, which can be plugged into the preview and program out sections of the iBoB.

4.8.2 To Turn on and Set Up iBoB DSK

1. Attach the video cables for the external cut and fill sources to the iBoB. Section 1.3 describes how to set the video format (composite, SDI, etc.) for each input to match the format of the key, and to assign it the names Key Cut and Key Fill. You must use timed or Sync sources in order for the iBoB DSK to work properly.

2. In **PixMaster Show Editor**, assign the DSK cut and fill sources to a show, using the switcher source assignments window, see section 3.9.1

3. Press the **[iBoB DSK]** PixButton in the top right corner of the panel, which will assign the device controls to iBoB DSK, resulting in the PixPad and display as shown below:



iBoB DSK PixPad

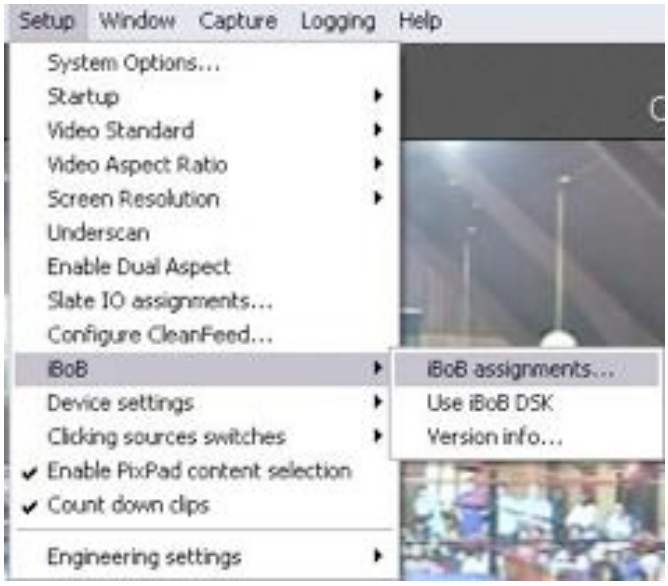
4. Assign the Fill Source, by pressing the **[Fill Src]** PixButton, and then select the external source that you wish to fill it with by pushing it the correct button from the **[source]** row, which will illuminate.

5. Assign the Cut Source, by pressing the **[Cut Src]** PixButton, and then select the external source that you wish to fill it with by pushing it the correct button from the **[source]** row, which will illuminate.

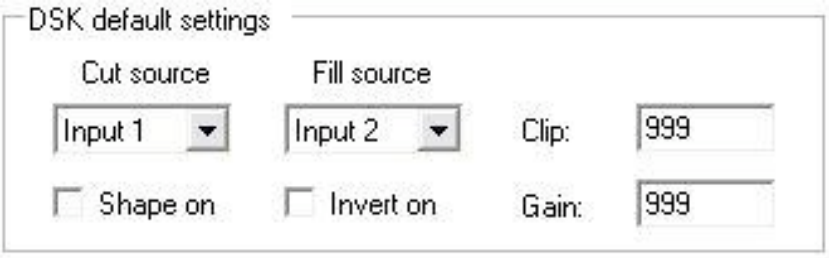
6. Preview iBoB DSK, press the **[iBoB DSK]** PixButton in the upper right corner of the panel to access the iBoB DSK PixPad, then press the **[Prev OnOff]** PixButton and the key will appear on the preview monitor.

7. If needed, turn the Gain and Clip knobs to the appropriate levels for the key source by turning the
[left knob] and **[center knob]**

8. Now that you have determined the clip, gain and sources settings for use with iBoB DSK, they can be saved as default settings that appear every time you turn on the system. To set these default settings, click on the **Setup** menu in BPswitcher and the following drop down window will appear.



9. Click on **iBoB** and **iBoB assignments**, and the iBoB Assignments Window will appear, a portion of which is shown below for iBoB DSK default settings.



10. In the iBoB DSK default settings box above, enter the desired **clip**, **gain** and **sources** for cut and fill, and whether the key needs to be **shaped** or **inverted**.

11. Press **Save.**

4.8.3 To Operate iBoB DSK

1. To Preview iBoB DSK, press the **[iBoB DSK]** PixButton in the upper right corner of the panel to access the iBoB DSK PixPad, then press the **[Prev OnOff]** PixButton and the key will appear on the preview monitor.

2. To bring the DSK on air, press the **[Prog OnOff]** PixButton

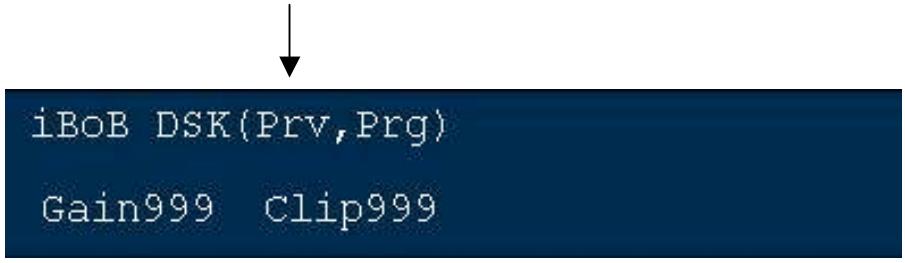
   iBoB DSK can be taken off preview or program by pressing the **[Prev OnOff]** and **[Prog OnOff]** buttons again, respectively.

iBoB DSK PixPad

Modifying iBoB DSK

The key controls may be changed from this PixPad at any time during a show, even if default values have been set for them, including **Invert OnOff, Shape OnOff, Cut Src, Fill Src** on the above PixPad, and the knobs for **Clip** and **Gain**.

As each modifier is applied or changed its status is reflected in the display, as shown below.



NOTE: iBoB DSK can only cut on/off, you can not add any mix/effects or tie it to a transition. iBoB DSK also is downstream of all the keys, meaning that it will appear on top of all key layers.

4.9 Auxiliary Output Control

4.9.1 Aux Output on Slate 100 and Slate 1000

In version 6, Slate 100 and 1000 switchers have assignable video outputs on the Slate switcher card called out A, B, C, D or E if a second I/O card is installed. Out A - E can be assigned to program, preview, clean feed (of any Key under **Clean Feed Assignments** under the **Setup** menu) or Aux 1.

To assign an Output to Aux 1, in BPswitcher, go to **Setup** down to **Slate IO Assignments** and set an Out (A-E) to Aux 1. Then click save. As described in section 1.2.8.

To operate Aux 1:

1. To operate Aux1, on the control panel (or SoftPanel), press the Aux 1 button and it will illuminate.

2. Select the source you wish to assign to Aux 1 by pressing its button in the source row, and it will illuminate, and the video will be sent to the selected output. In addition the Multi-View will show the name of the source selected if the Aux Tab is selected in the lower left corner of the Multi-View. You may select any source for Aux 1, whether it is an external live source or an internal source, such as a clip, graphic, logo or still playing from inside the switcher.

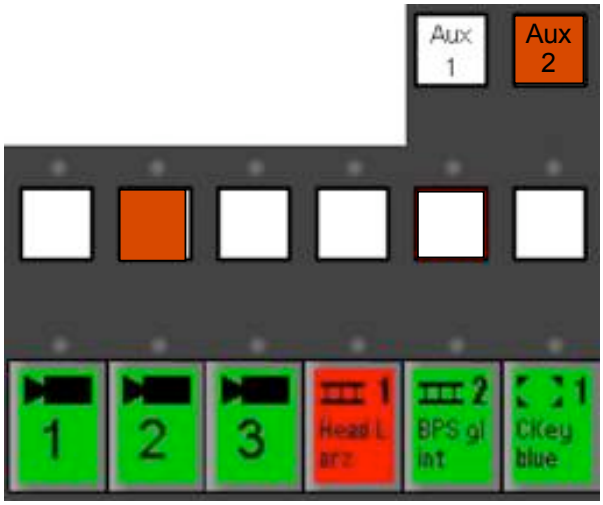
4.9.2 Aux Output on Slate 2100

In Version 6, Slate 2100 switchers have 3 auxiliary outputs:
- Aux 1 : controls the iBoB's Out F
- Aux 2 : controls the iBoB's Out G
- Aux 3 : controls the Slate switcher card's Out C-E
  (assignable in Slate IO Assignments)

To operate an Aux:

1. Select the desired Aux on the control panel (or SoftPanel), by pressing the Aux 1, Aux 2, or for Aux 3 press Aux 1 and then the Aux 3 PixButton on the PixPad.
   The illustration below shows the Aux 3 button on the PixPad.

2. Select the source you wish to assign to this Aux output by pressing its button in the source row, and it will illuminate. In the illustration shown below Aux 2 has been assigned to Cam 2.



If you wish to assign program or preview to an aux, press the Program or Preview PixButton on the PixPad.

3. Aux 1 and Aux 2 have access to Program, Preview or any external sources connected through the iBoB.
Aux 3 has access to Program, Preview or any internal sources (clips, stills, cgs, logo) as well as inputs 9-12 through the optional Slate IO card.
If it is desired to access both internal and external sources you may feed Out C or E to an input on the iBoB. Now Aux 3 is an input to your switcher so what ever is selected on Aux 3 can now be accessed by Aux 1 and 2.

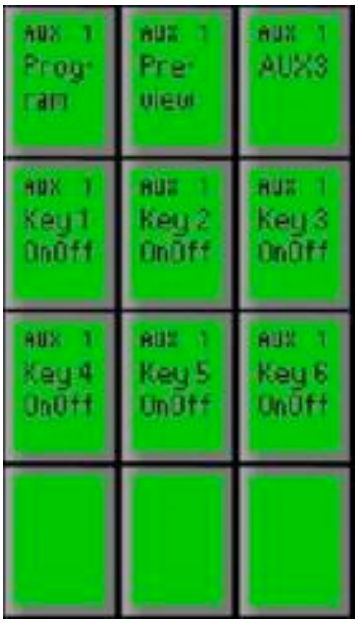
4.9.3 PowerAux Control

For the most part, traditional switchers offer only one layer to be sent to an Auxiliary Output. As an option, all Broadcast Pix Slate switchers have the ability to overlay any/all of Keys 1-6 onto an Aux output, this is known as PowerAux. This feature is ideal for producing two simultaneous shows from the same system for two different audiences, without the high cost and complexity of a 2ME switcher. On A Slate 100 or 1000 PowerAux controls are accessed through Aux 1 on a Slate 2100 PowerAux is controlled through Aux 3.

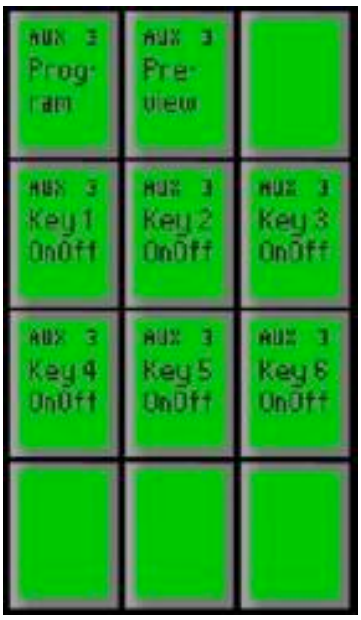
To Access PowerAux:

1. Set up your Auxes as described in section 4.9.

2. Controls for PowerAux reside inside of Aux 1.
   Select the **[Aux 1]** button in the Destination Row of the control panel (or SoftPanel), it will illuminate, (to access the Aux 3 controls select the **[Aux 1 Aux 3]** PixButton) and the PixPad will display the following:

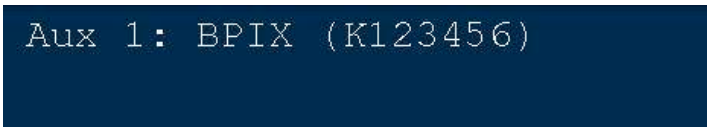


PowerAux PixPad on 100/1000



PowerAux PixPad on 2100

3. In the PixPad press the desired Key(s) to be overlaid onto Aux 1. The display will read out the keys you have on Aux 1 as shown below.



NOTE: Although you can use PowerAux on the Preview and Program outputs, if a keyer is already on Preview or Program, you can not remove the keyer from only the PowerAux. You can, however, keep the keyer on PowerAux, if you remove it from Preview or Program.

4.10 StudioMemory

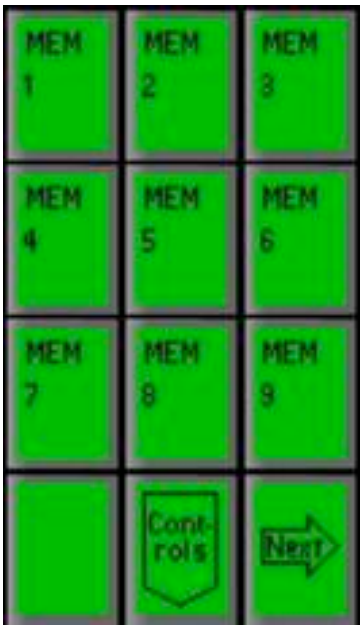
The Broadcast Pix system has a powerful memory system that can combine all devices in the system. It enables the saving and instant recall of a panel's set-ups, or the set-ups plus the sources assigned, or even the individual content element in a device, such as a specific lower third graphic in the CG. The Mem system can save an entire panel, or a portion of it, such as a keyer, effect, preview source, aux, key state, etc.

Memories, or "Mems" for short, are generally saved during pre-production before a show is on-air. The saving process takes several steps to indicate exactly which portions of the panel to save, and whether to save just the set-ups or the source assignments as well. In contrast, since the recalls of memories happen on air, recall is streamlined and designed to be quickly accessible.

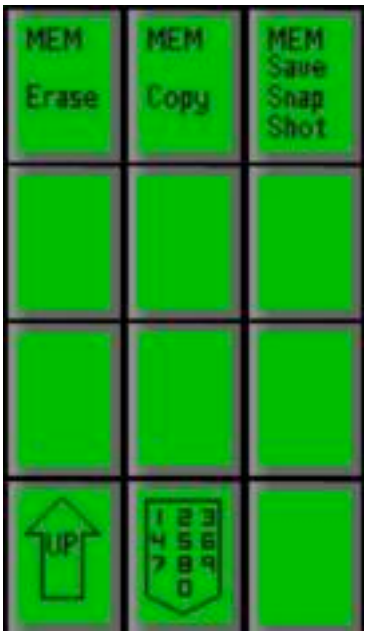
4.10.1 To Save a Mem

1. Begin by putting the panel into the desired state that you would like to save.

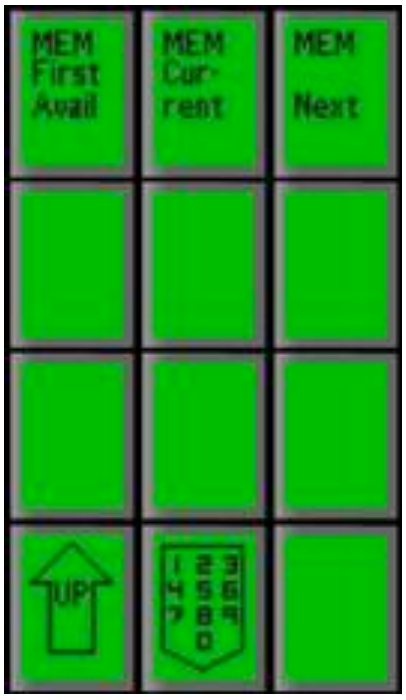
2. Press the **[Mem]** button in the Device Select, and the fist page of your memories will appear in Mem PixPad.



3. On the Mem PixPad, press the **[Controls]** PixButton, and the following Mem controls PixPad will appear.



3. On the Mem controls PixPad, Press the **[MEM Save Snap Shot]** PixButton, and this PixPad will appear, which you can select where you want to save the snapshot mem:



For the first unused memory position, press the **[Mem First Avail]** PixButton

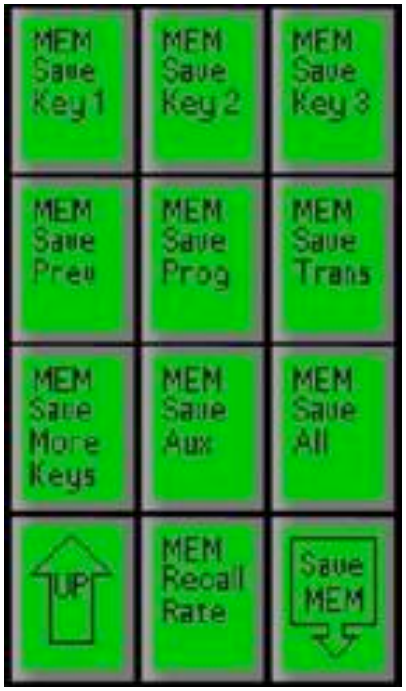
To edit a current Mem that you recently opened, press the **[Mem Current]** PixButton

For the next Mem beyond the current one, press the **[Mem Next]** PixButton

For a specific number press the **[Numeric Keypad]** PixButton, and a keypad will appear on which you can enter the Mem number desired.

When selected, the Mem location chosen will appear in the panel display, such as Mem19, and the Mem elements PixPad will appear, as shown below:

4. On the Mem elements PixPad, choose the panel elements you want to save on this mem by pressing the various PixButtons. As you press each, the display will keep track of them, so you know what you saved. For example, to save key 1, press the **[Mem Save Key 1]** PixButton:



Press it once for the key set-up, and the display will say 1k. For example a DVE box set-up.

Press it again to save both key set-up and the source number assigned to it, and the display will say 1s. For example a DVE box set-up, plus which source number to fill it with.

Press it yet again to save the key set-up, plus the source number, plus the content element number within the source, and the display will say 1c. For example a DVE box set-up, plus which source number and content element number to fill it with (like the 4th clip in the first clip store).

If you press it a third time no key 1 information will be saved, and the display will reflect that.

5. For example, if you want to save all three keyer set-ups, and the sources as well on keys 1 and 3, then press the **[Mem Save Key 1]** PixButton twice, the **[Mem Save Key 2]** PixButton once, and the **[Mem Save Key 3]** PixButton twice, and the following will appear in the display:

6. Continue selecting any other elements of the panel you would like to save in this Mem:

   [Mem Save Prev] PixButton will save the preview source, press again to save the content. (Pv or Pvc)

   [Mem Save Prog] PixButton will save the program source, press again to save the content. (Pg or Pgc)

   [Mem Save Trans] PixButton will save the transition selected, as well as any modifiers including softness, aspect and rate. If you press it again it will also save the state of the [Bgr] and key transition buttons. (T or T+)

   [Mem Save More Keys] PixButton enables saving the state of the direct key buttons 1-6, Keyer set-ups for Keys 4-6 , and the iBoB DSK state. It does this individually by bringing up a secondary PixPad that lets you select the each option. When finished press the **[Up Arrow]** to return to the main element selection PixPad. (see next page)

   [Mem Save Aux] PixButton enables saving the state of the 3 Auxiliary outputs by bringing up a secondary PixPad that lets you select the each Aux output or all auxes. When finished press the **[Up Arrow]** to return to the main element selection PixPad. (see next page)

   [Mem Save All] PixButton saves the state of all the devices on the control panel. Press it again and it will clear the memory and the display.

   [Mem Recall Rate] PixButton sets the amount of time in frames a memory will take to be recalled during a production. Useful for creating on-air DVE moves for push-back animations.

NOTE: When you save a source in addition to a set-up (such as for a key, prev, prog or aux), the Mem will remember the source location, such as the sixth source of the 18 available. If you reassign sources in another show, and source 6 is something else, then care should be taken, as this mem will still recall whatever is in source 6. The same applies for internal content CGs, Clips, Stills and Logos.

7. **[Mem Save Key 4]** PixButton will save the Key 4 keyer set-ups, press again to save a specific source, press once more to save the content. (4k, 4s or 4c)

[Mem Save Key 5] PixButton will save the Key 5 keyer set-ups, press again to save a specific source, press once more to save the content. (5k, 5s or 5c)

[Mem Save Key 6] PixButton will save the Key 6 keyer set-ups, press again to save a specific source, press once more to save the content. (6k, 6s or 6c)

[Mem Save Direct Key 1] PixButton will save the state (on/off) of Direct Key 1. (D1)

[Mem Save Direct Key 2] PixButton will save the state (on/off) of Direct Key 2. (D2)

[Mem Save Direct Key 3] PixButton will save the state (on/off) of Direct Key 3. (D3)

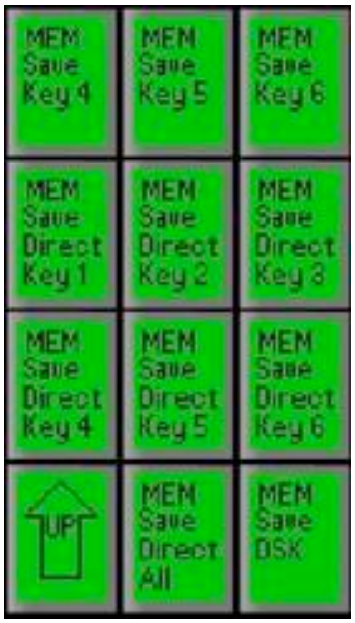
[Mem Save Direct Key 4] PixButton will save the state (on/off both on preview and program) of Direct Key 4. Useful for quickly brining on/off Key 4. (D4)

[Mem Save Direct Key 5] PixButton will save the state (on/off both on preview and program) of Direct Key 5. Useful for quickly brining on/off Key 5. (D5)

[Mem Save Direct Key 6] PixButton will save the state (on/off both for preview and program) of Direct Key 6. Useful for quickly brining on/off Key 6. (D6)

[Mem Save DSK] PixButton will save the state (on/off both for preview and program) of the iBoB DSK. Also saves Clip and Gain settings. Can only be saved on a 2100. (DSK)

[Mem Save Direct All] PixButton is a short cut for saving Direct Keys 1 to 6. Press again and it clears all 6 Direct Keys from the display. (D123456 or blank)



[MEM Save More Keys]

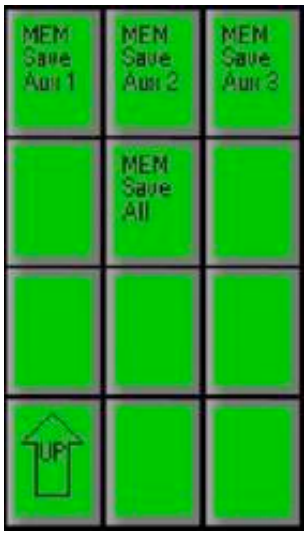
PixPad

8. **[Mem Save Aux 1]** PixButton will save the source assigned to Aux 1. (A1)

   [Mem Save Aux 2] PixButton will save the source assigned to Aux 2. Only available on a 2100. (A2)

   [Mem Save Aux 3] PixButton will save the source assigned to Aux 3. Only available on a 2100. (A3)

   [Mem Save All] PixButton is a short cut for saving all 3 Auxes. Press again and it clears all 3 Auxes from the display. (A123 or blank)



[MEM Save Aux]

PixPad

9. Once all your options are selected, on the main Mem elements PixPad press **[Save MEM].** Once select the display will read out that your memory is saved, as shown below.

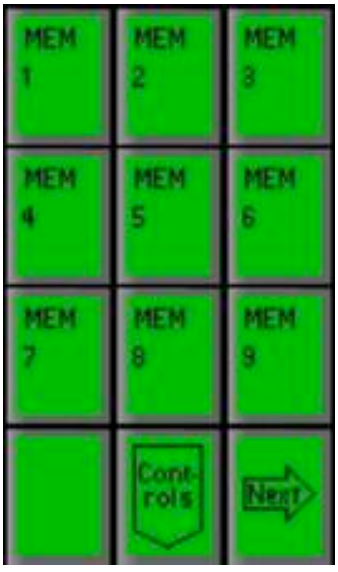

```
M19(1c2c3c4c5c6cPvcPgcT+D123456A1234R20)
MEM19 saved
```

4.10.2 To Recall a Mem

1. Press the **[Mem]** button, and the Mem PixPad will appear.

2. Press the desired **[Mem x]** PixButton and the memory will be recalled at the frame rate saved in that Mem.

   If the desired Mem is not on this top page, either press the [Next] PixButton until you reach the page that contains it or press the [Controls] PixButton and then the [Numeric keypad] PixButton and enter the number of the desired Mem.



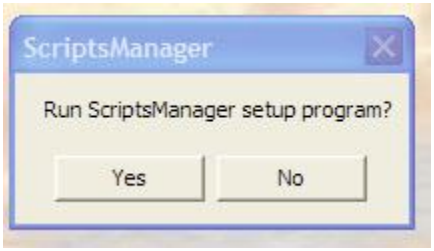
NOTE: Memories are global, if sources are remapped or content is moved your Mem might not recall correctly. At times the display may read “Mem X failed to fully load”. In BPswitcher go to **Logging**, **Error Log** to view what element failed to load.

4.11 Scripts

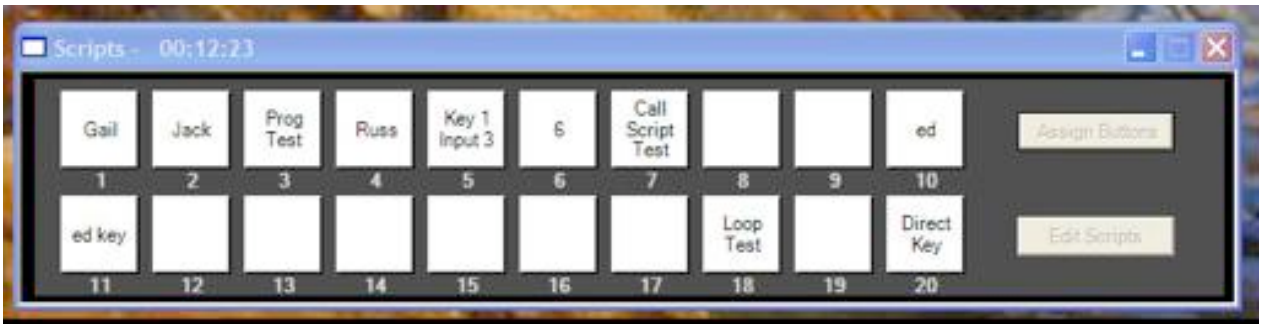
Scripts is a powerful memory system that enables a sequence of panel button pushes to be recorded and then played at the push of a button. Scripts can be played by either clicking on one of the 20 script buttons in the Scripts window on the Multi-View or double-punching a button on the control panel or SoftPanel. In addition, scripts can be set up to play from an external GPI (General Purpose Input) as well from a remote computer. You may have as many script windows running as you like, although you need to have enough licenses to run them, just like a SoftPanel. You may purchase more licenses from Broadcast Pix. To view how many Panels are licensed, in BPswitcher select the **About Tab.**

4.11.1 To Record a Script

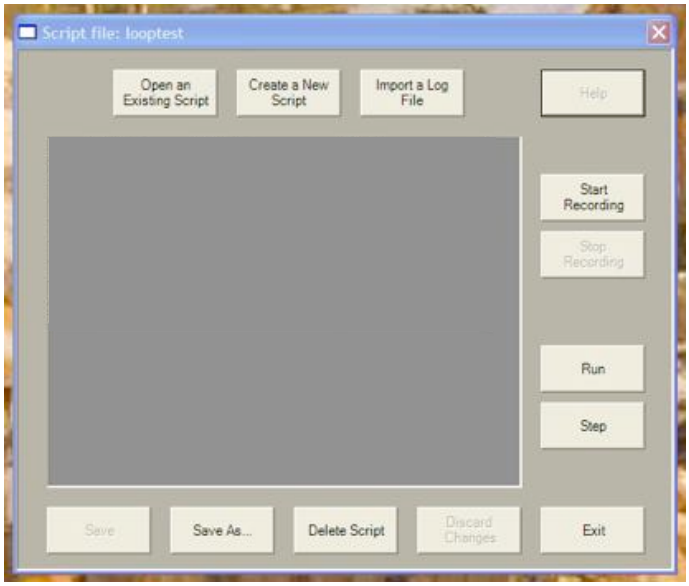
1. Double-Click on the **Scripts icon** on the desktop, and the Scripts Manager window will appear.



2. Click on **No** (for Setup, see section 4.11.3), and the Scripts window will appear.



3. Click on the **Edit Scripts** button, and the Scripts Editor will appear, as shown on the next page.



4. In the Scripts Editor window, click on **Create a New Script.**

5. Now you may start to enter actions items manually from a drop down list in the **Action** column or you may record button pushes directly from the control panel. To record actions from the control panel, click on the **Start Recording** button.

6. Then press the **buttons on the control panel** to create the desired script. The program will remember each button you push and the exact timing between pushes, in frames. Remember to select all the buttons necessary to perform your script, it is recommended to record your script slowly, then go back and change the timing of each action. This ensures proper button selection. When done creating your script, press **Stop Recording** on the Scripts Editor window.

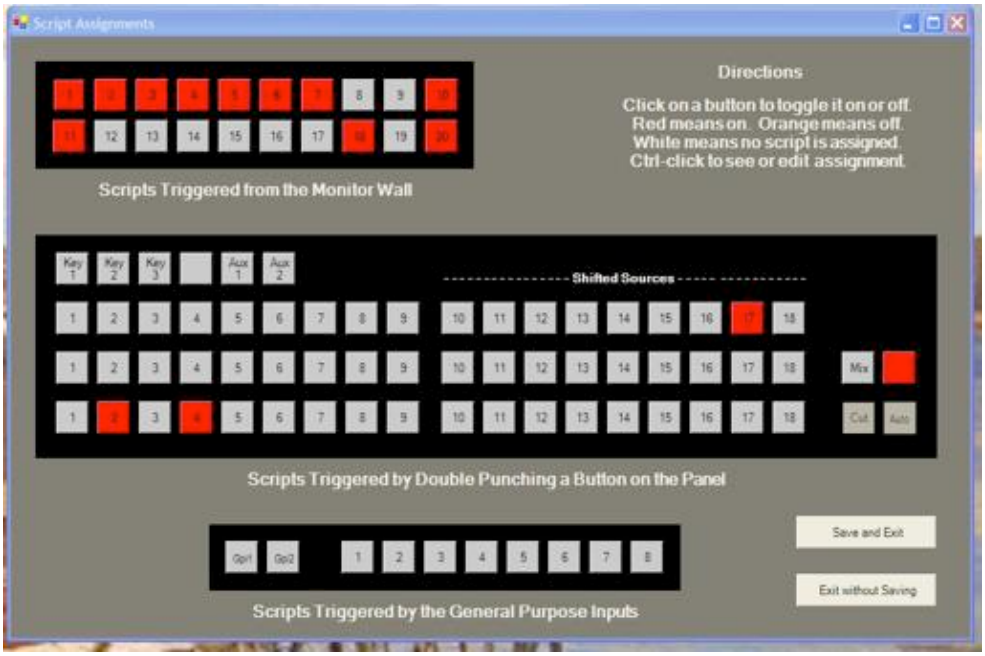
7. You can now adjust the timing by changing the values in the **Frames** column, this represents the amount of frames the action will wait to happen. Or add and remove more button pushes by using the **Insert** and **Delete** buttons on the keyboard. Scripts can not only recreate button pushes, but it can also recall a StudioMemory (MEM), as described in section 4.10, as well other scripts and log files. Each button on the control panel has an **ID** and a **Value,** you many manually select different **actions** from the drop down list to create a custom script.

8. To test your script, click on the **Run** button, and the script will begin controlling your control panel.

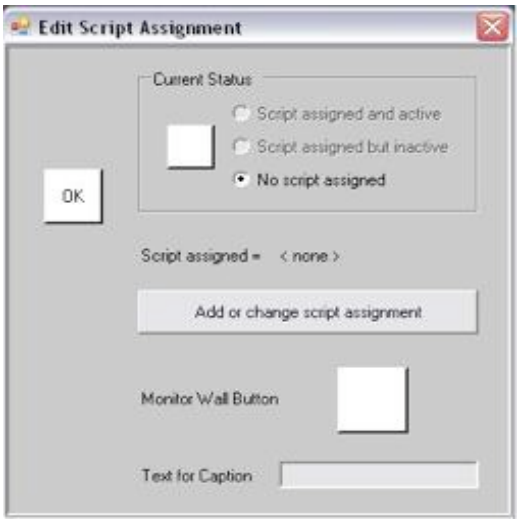
9. Save the script by clicking on **Save As**. In the save window, enter the **name** of the script, and click on **save.** All scripts are saved in the C:\\broadcastpix\Scripts folder.

4.11.2 Assigning a Script

Assign your newly created script to a scripts button by clicking on **Assign Buttons** and the Scripts Assignment window will appear:



On the Scripts Assignment window there are 20 Multi-View buttons for scripts, click on the **button** you wish to assign the new script to, and the following window will appear:



Click on **Add or Change Script Assignment** to locate your saved script, once assigned click on **Save.**

You can also assign a Script to a double-punch on the control panel, in the same way as described above. This is ideal for recalling highly used Scripts in a short amount time, one example for such use is for a replay wipe in sports production.

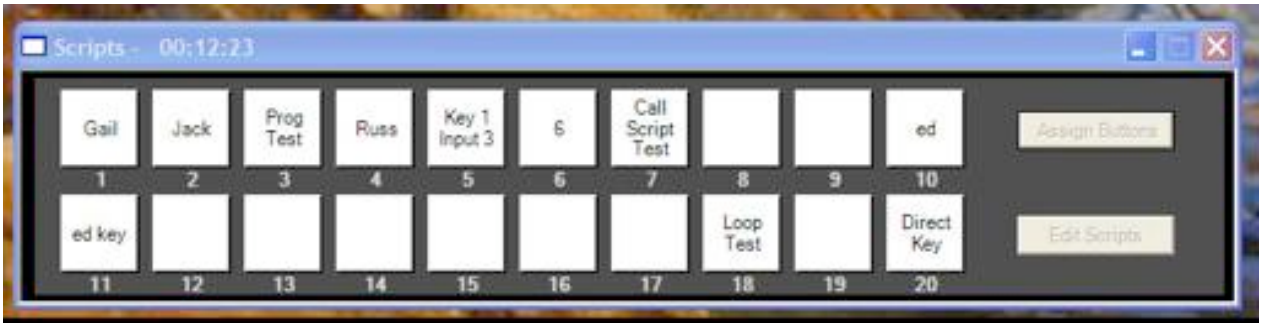
NOTE: You can not use Key the 1, 2 & 3 buttons for double-punch if you have 6 keyers enabled, since they are reserved for Keys 4-6.

4.11.2 Playing a Script

Scripts may be played from the Scripts window either locally or from a remote computer, from double-punching a control panel button or from a GPI trigger.

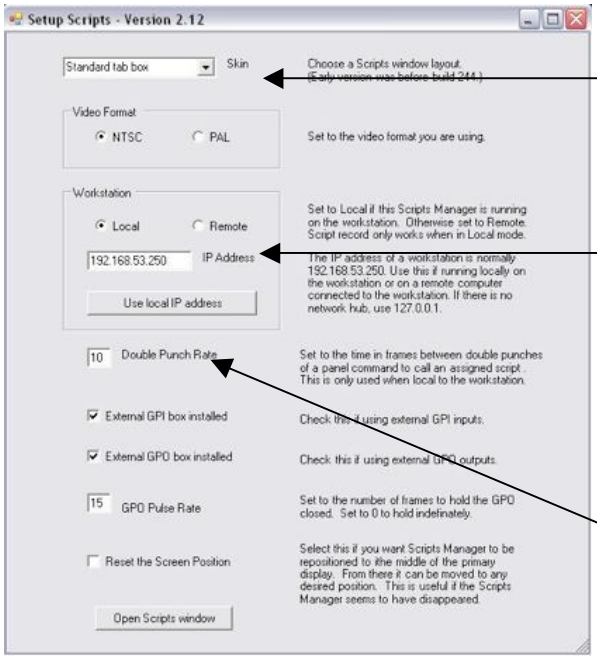
To play a script from the Scripts Window:

1. First make sure the scripts window is open, if not click on it on the desktop and it will appear



2. Click on the **Script button** you wish to play. It will immediately start executing, its button will illuminate yellow while it is running and a timer will appear in the window bar.

4.11.3 ScriptsManager Setup



Size of Scripts window. Standard Tab Box fits into the Home Tab on the Multi-View.

Scripts can run on the local workstation, or on a remote computer for team operation. Simply enter the IP address of the connected workstation. When running Scripts remotely, you need to copy the Scripts.exe application to the remote computer, as well any script files. You may create/edit any script from the remote computer, although you can not record a script from the control panel.

The double-punch rate (in frames) can be adjusted to reduce error when hitting a panel button twice. The smaller the number the faster you need to double-punch.

NOTE: Scripts requires use of a panel license, to purchase more licenses contact Broadcast Pix.

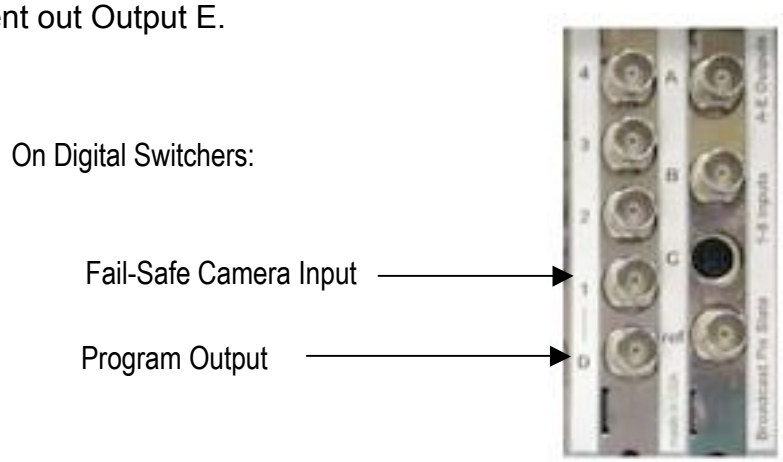
4.12 Fail-Safe On-Air Production

While the workstation is very reliable, if it should ever lock up a Fail-Safe capability can be set to automatically take over, and keep video on-air until the workstation recovers. In the Slate 100 and Slate 1000, one camera is sent to program output. On the Slate 2100, the iBoB enables all cameras the are attached to the iBoB to still be switched even if the workstation is unplugged.

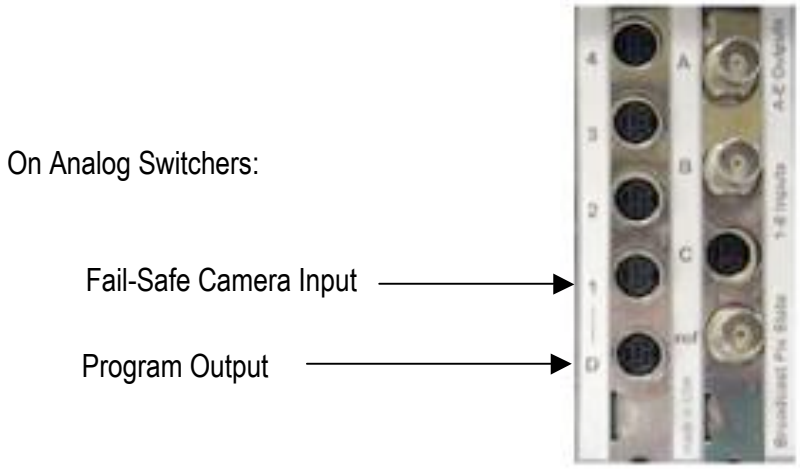
4.12.1 Fail-Safe on Slate 100 and Slate 1000

Fails-Safe on Slate 100 and 1000 switchers offer basic relay outputs. If the computer should fail or lock up, or be unplugged, then Input 1 will be automatically sent out of the D output and on systems with two I/O cards installed, when in fail-safe, Input 5 will also be sent out Output E.

On Digital Switchers:



On Analog Switchers:

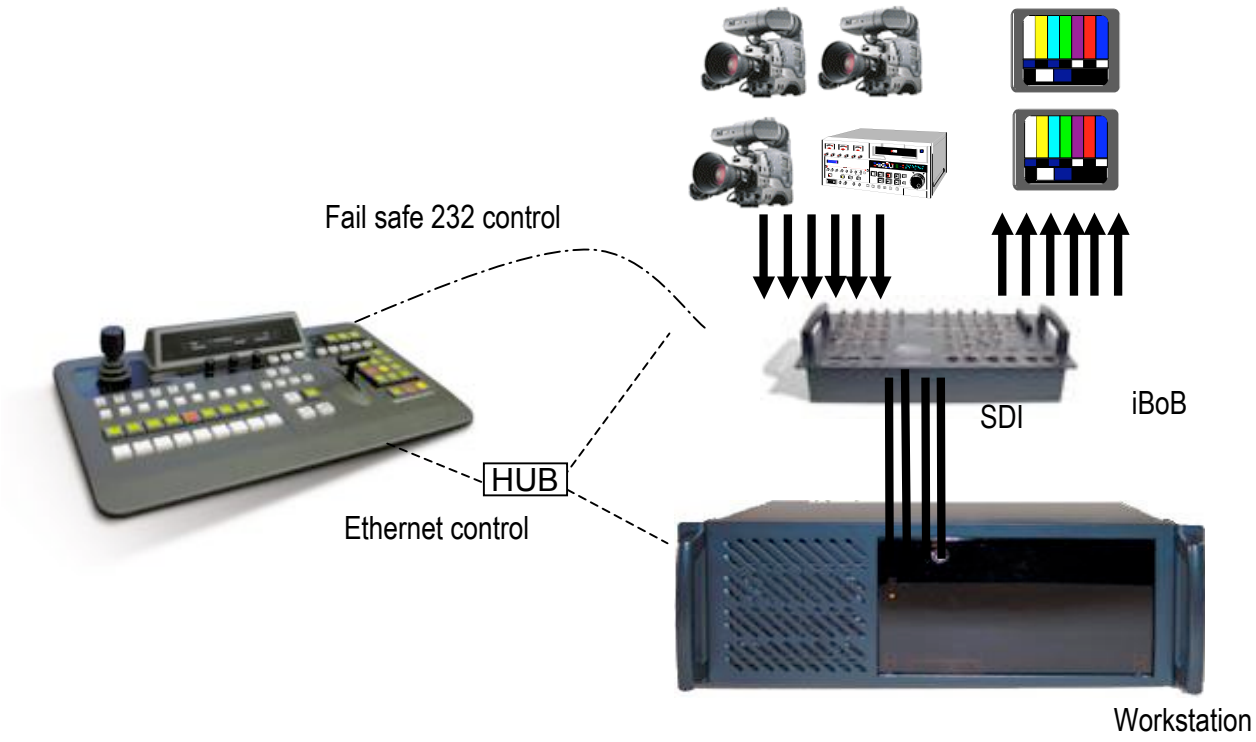


NOTE: On Analog I/O cards, the format of Input 1/5 must match the format of Output D/E for Fail-Safe video to work properly. Both need be be either Composite, S-Video or YUV.

4.12.2 Fail-Safe on Slate 2100

While the workstation is very reliable, if it should ever lock up the cameras stay on-air, thanks to a redundant fail-safe RS-232 connection between the control panel and the intelligent Break-out-Box (iBoB). Cameras can still be switched while the workstation recovers.

Redundant control panels can take over if any one panel stops, see the multi-use section. Redundant power is available for the control panel, iBoB and workstation.



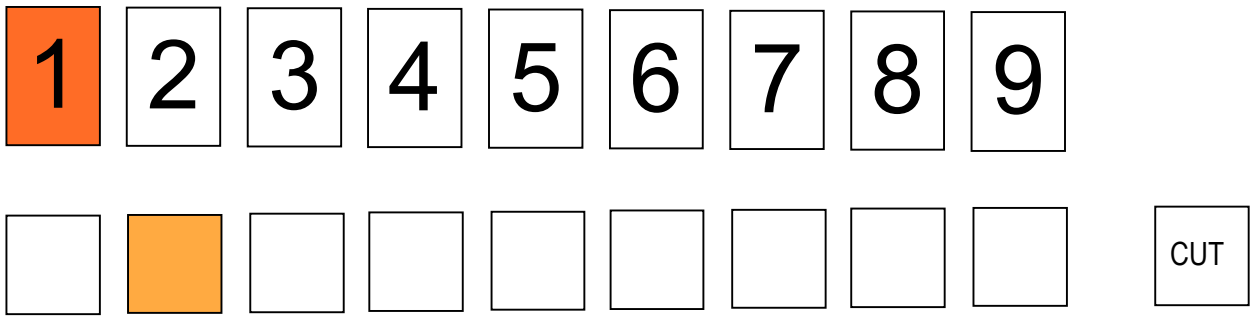
Selecting the Fail Safe Device

The fail-safe device is the camera, VTR or other external source that you would like the system to automatically select if there is ever a failure to the workstation or network. The Fail-Safe Device is show specific so that different shows may specify different fail safe sources. To set the Fail-Safe Device, see section 3.9.2

4.12.3 Fail-Safe Operation on Slate 2100

If during production the workstation should lock-up or the network connection should fail:

1. The control panel will **automatically** detect the problem and the Fail-Safe device will appear on the program monitor. At the same time the control panel drop into "Fail Safe" mode, and it's PixButtons will appear as shown below.



2. In Fail-Safe mode, all of the above buttons will still work. You can continue to preview these sources on the preview monitor and cut them to air with the cut button.

   These source number refer to the router or iBoB inputs. Inputs 1 through 8 are the cameras and others external sources connected to inputs 1-8. Press shift to access the Studio Prog and Studio Prev, which is where the workstation is connected to the iBoB or router, and show the full program and preview output of the workstation, as labeled.

   Keep in mind, when the control panel is in Fail-Safe mode, you have no access to any internal content.

To Return to Show Mode after the workstation recovers:

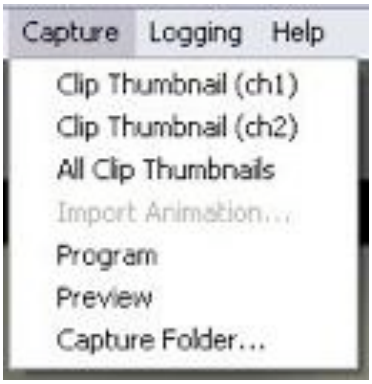
1. **Load a show**, if a show is not set to Auto-Load.
2. You will see the program and preview of what is selected by the control panel in the Preview and Program monitors of the Multi-View. If it looks good on preview, then it can be selected on program by pressing the **[Cut]** button.
3. Press the **[Join the Show]** PixButton in the upper corner, as illustrated below, to enter into the show and to return the control panel to its normal mode.

4.13 Capture of Stills

The Broadcast Pix system can capture a still image of program output or preview output. The still image can then be loaded into a still store and used in a show.

4.13.1 To Capture a Still Image

1. In BPswitcher select the **Capture** drop down menu, as shown below.



2. Either select **Program**, to capture a still of what is currently on Program.

3. Or select **Preview**, to capture a still of what is currently on Preview.

4. Once captured, a pop-up window will notify you that a still has been successfully captured. It may take a few seconds for this window to appear.
   In result, a file named preview.bmp or program.bmp will be created in the Capture Folder.

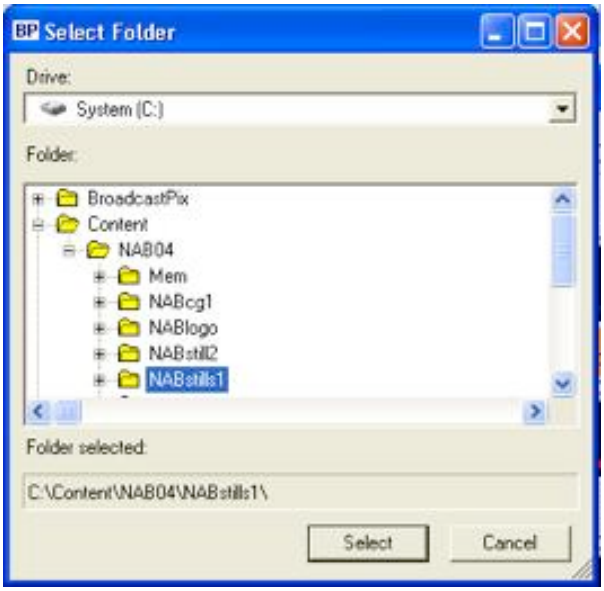
NOTE: If it is desired to capture more than one still image, it is necessary to rename the file that is saved to the Capture Folder, since any other captures will overwrite the first one.

4.13.2 Selecting the Capture Folder Destination

1. Click on the **Capture** menu, and then the **Capture Folder** item as shown below

This will bring up the Select Folder window.

2. Use the select folder window to navigate to where you would like to keep your captures. In the example shown below, the Select Folder window has selected a still folder that is used in a show. When you choose the folder you want click on **Select.** The default folder is C:\BroadcastPix\Captures.



Section 5:
Inscriber Character Generator

Every Broadcast Pix Slate system includes a broadcast-quality character generator from Inscriber called TitleMotion Pro.
The CG has very extensive help menus. No attempt is made here to cover all of the capabilities of the application.

Instead, this section 5 of the Broadcast Pix manual provides a quick overview of how to create CG graphics, and then focuses on how to import them into the Broadcast Pix system, and how to control them on-air from the Broadcast Pix control panel.

TitleMotion Pro can create three main types of CG graphics:

1. Still images — see section 5.2
2. Rolls/Crawls — see section 5.3
3. 2D/3D Animations — see section 5.4

5.1 CG Installation

The Broadcast Pix system ships with the Inscriber TitleMotion Pro software already installed. The Inscriber box packed with the system includes a copy of the CG software, and a purple application dongle. The dongle must be attached to the system to be able to open and use the application. The dongle attaches to any USB port on the back of the workstation. If the dongle is not attached when you attempt to open the application, you will get an error message that reads dongle error.

The included Inscriber CD may be installed on other systems, but they will only work when the dongle is moved to them. Additional dongles may be purchased as options.

If the optional CG Connect software is purchased, it too will come pre-installed on your system. To operate CG Connect the green Dongle is provided, which needs to be plugged into another USB port.

On newer systems, both the TitleMotion Pro and CG Connect Dongles are installed internally at the factory.

5.1.1 TitleMotion Pro Canvas

Before creating any graphics with Inscriber TitleMotion Pro, it may be helpful to understand the main window/canvas of the application. Below if a blank canvas with a brief overview of some main buttons, for further information refer to the **Help** drop down menu in TitleMotion Pro.

Text / Graphic Plane: Select to activate a text or graphic layer. CTRL + Mouse Click on text or graphic will do the same.

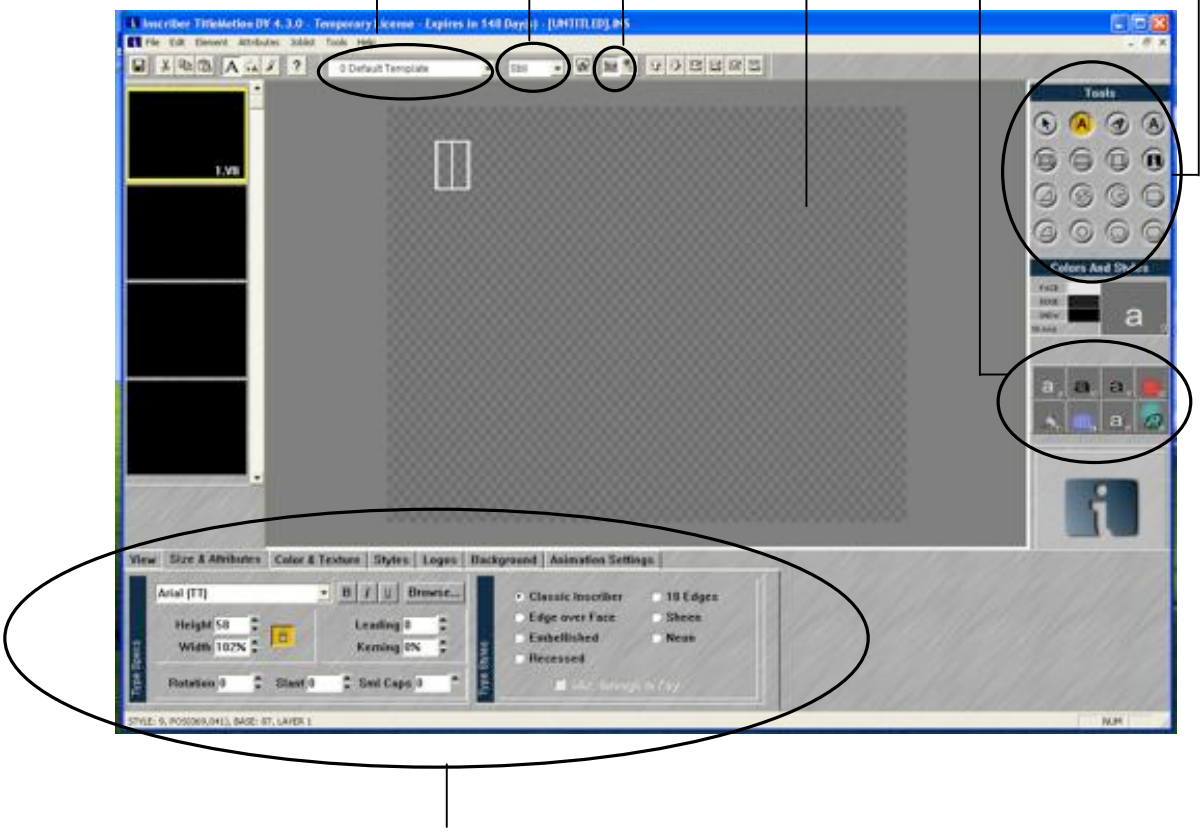
Tool Palette: Select to create various text, logos, or custom graphics

Title Types: Select from Still, Roll, Crawl or Animation

Styles Palette: Shortcut to customizable styles for text/graphics

Template Manager: Drop down menu to access 200+ pre-designed or user-saved templates

Canvas: Workspace in which you create CGs



Size & Attributes: Change type of font and its attributes.
Color & Texture: Change text/graphic's coloring/shading. Can be solid, gradient, transparent or textured.
Styles: Save custom font and graphic styles for quick recalling.
Logos: Where pictures, clip-art and other graphic elements are stored. Right-Click to add to library.
Background: Add a full-page colored background or graphic. Default is transparent/none.
News Edit: Where RTX Tags are applied for CG Connect.

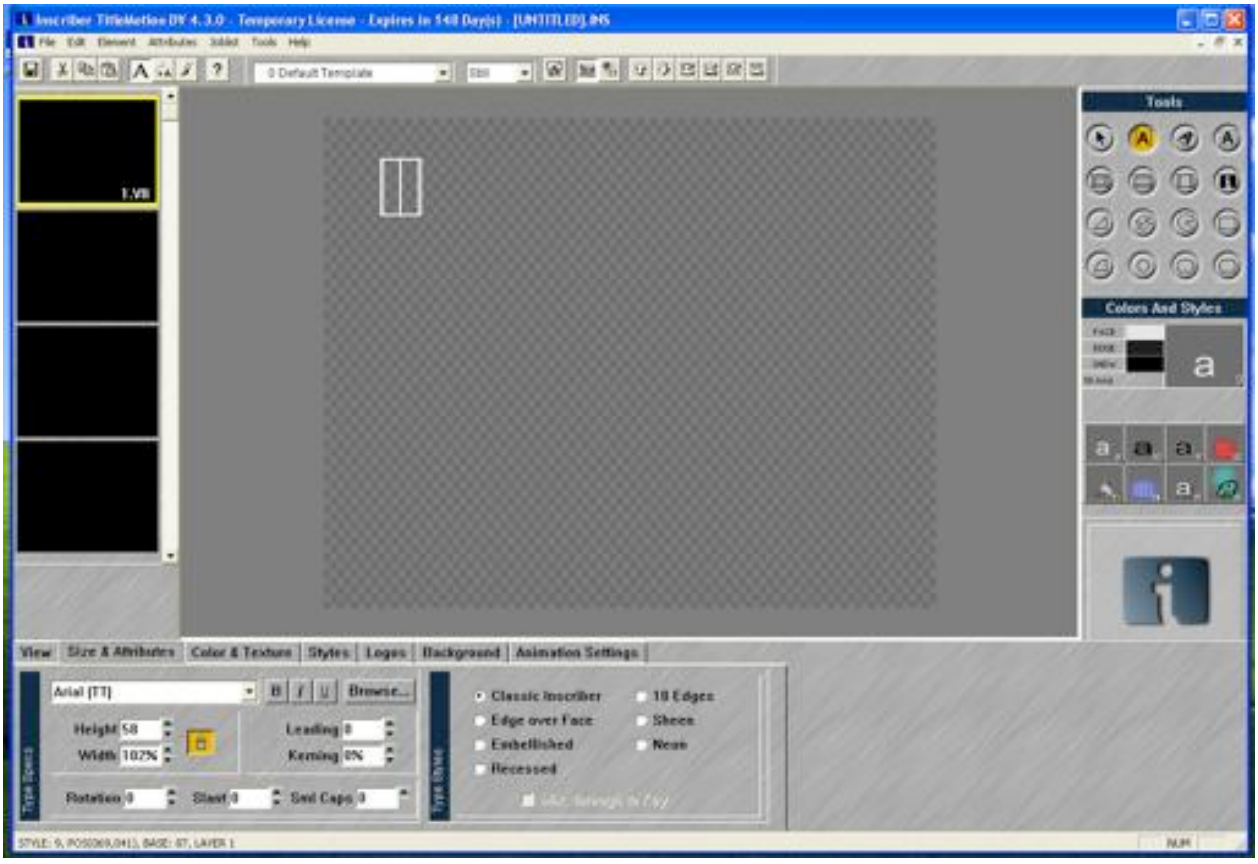
NOTE: It may be useful to turn on the Title Safe zone, which can be found under the View Tab on the bottom on the Inscriber canvas. This will act as a guide when creating graphics so your text does not get cut off on the edges of TV screens.

5.2 Creating Still CG Graphics

CG graphics can be created from scratch using all of the tools in TitleMotion Pro. The easiest way to get started however, is to use one of the over 200+ pre-designed CG templates provided by Inscriber.

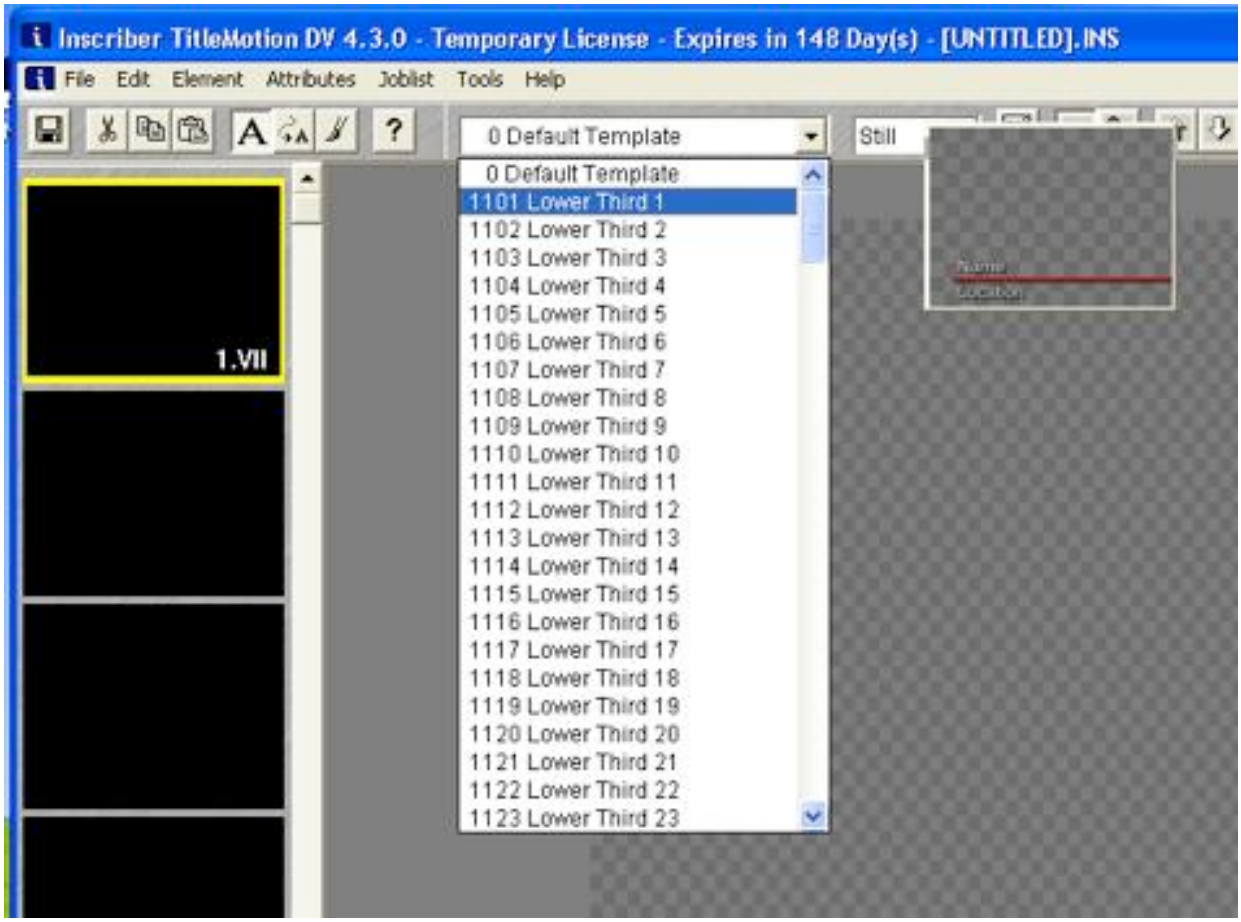
To create a CG using a template:

1. Double-Click on the **TitleMotion Icon** on the desktop to start the Inscriber application and the application will launch a blank canvas, as illustrated below.

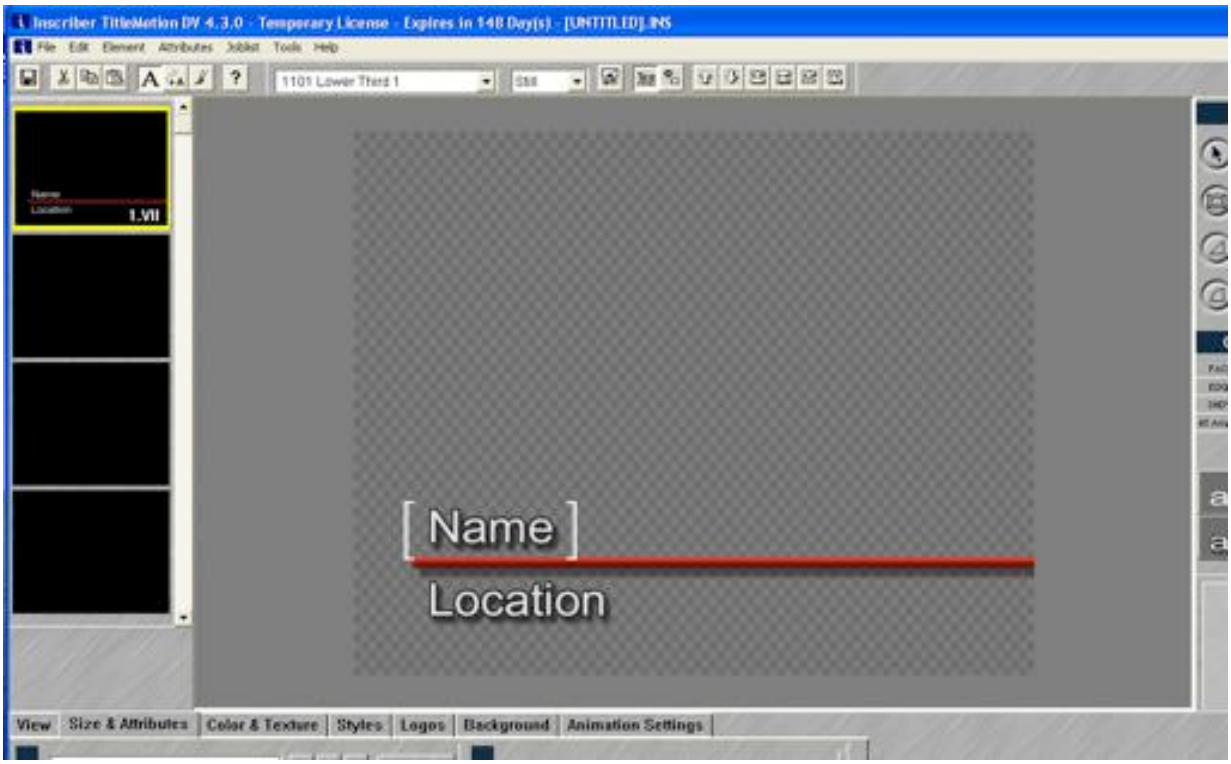


2. At the top of the Inscriber GUI, click on the **[Templates Palette]** drop down menu.

3. Scroll down through the many templates until you find one you like. As you scroll down a preview of each template is shown as illustrated below:



4. Click-on the desired **Template** and it will be loaded.



5. Position the cursor over the letters and then type in what you want. That is all there is to creating a professional title.

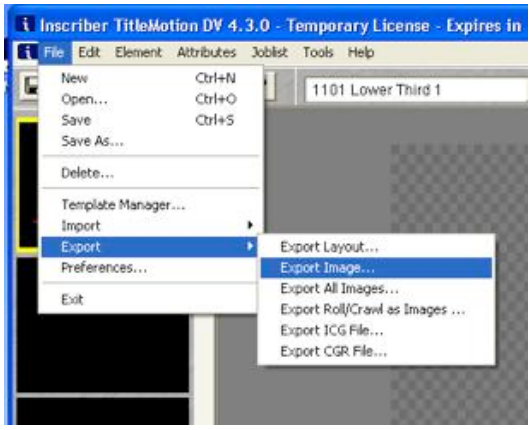
   If desired, you can modify your title by changing the font, point size, position, color, shadow, sheen, glow, transparency, etc. Use the various tabs on the bottom of the canvas to change these attributes. See the Inscriber Manual or help menus for more information.

NOTE: In the Text Plane, the above **[ ]** represent 'Text to Tabs', which will align text based on tab stops in the View Tab. Right + Click to deselect this option under 'Constrain' to have the text box be free-formed. You may now Click + drag to position text or ALT + Arrow Keys to nudge text by small amounts.

5.2.1 Exporting a Still graphic from Inscriber to Broadcast Pix

Once you have created a CG, you then need to export it for the Broadcast Pix system to access it. You can save it to many common files types, such as Bitmaps, JPEGs, Targas, as well as editable Inscriber .ICG files. It is important to export any graphics that contain a transparency/alpha channel with a 32 Bit Depth, in order for the graphic to key over video. The two commonly used files in Broadcast Pix are Truevision Targa files (.TGA) and Inscriber CG files. (.ICG)
.ICG files give you the option to update/change a graphic, that is already in your Broadcast Pix show, quickly and on-the-fly for immediate results, see section 5.7.

To Export a Still Graphic:

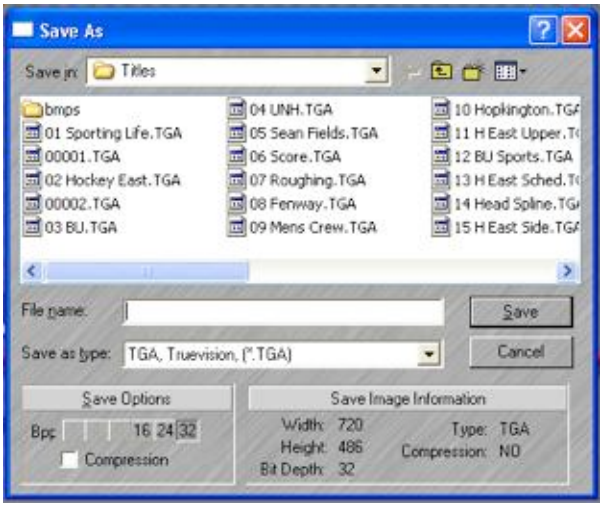


1. On the Inscriber GUI, at the top left, click on the **File** menu, and a drop down menu will appear.

2. Click on **Export, Export Image** and the Save As window will appear.

3. Change the file type to **TGA, Truevision (.TGA) or .ICG** or any other desired file format.

4. Click on **32 Bit** under Save Options, to preserve the alpha channel (if available)



5. Type in the **File Name**.

6. Change the **Save In** storage location to the folder in which you wish to keep your titles. In general, all CG graphics are kept in the central library on the C drive: C:\\graphics\cg\
(All stills and logos are kept in C:\\graphics\stills\ and C:\\graphics\logo\ respectively).

7. Click On **Save.**

8. You may now add the created graphics to your Broadcast Pix show, as described in Section 3 with PixMaster.

5.2.2 Exporting Graphics from Photoshop to Broadcast Pix

When exporting from Adobe Photoshop, you may export to many popular file formats, like .JPEG and .BMP, to import into the Broadcast Pix system. Although neither file format supports an alpha channel or transparency layer, a Targa/Truevision, .TGA, file does support a 32 bit alpha channel. Create your graphics using a 720/486 (NTSC) or 720x576 (PAL) canvas, at 72 pixels/inch in an 8 bit RGB color mode, using a transparent background. Prior to exporting, you will need to prepare your Photoshop document in order for the alpha channel to be recognized in Broadcast Pix.

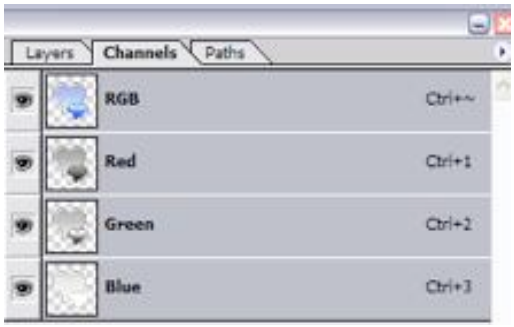
To create an alpha channel:

1. In Adobe Photoshop, select the **Magic Wand Tool** from the Tools Window, or **W** on the keyboard, after you've created and completed your document.

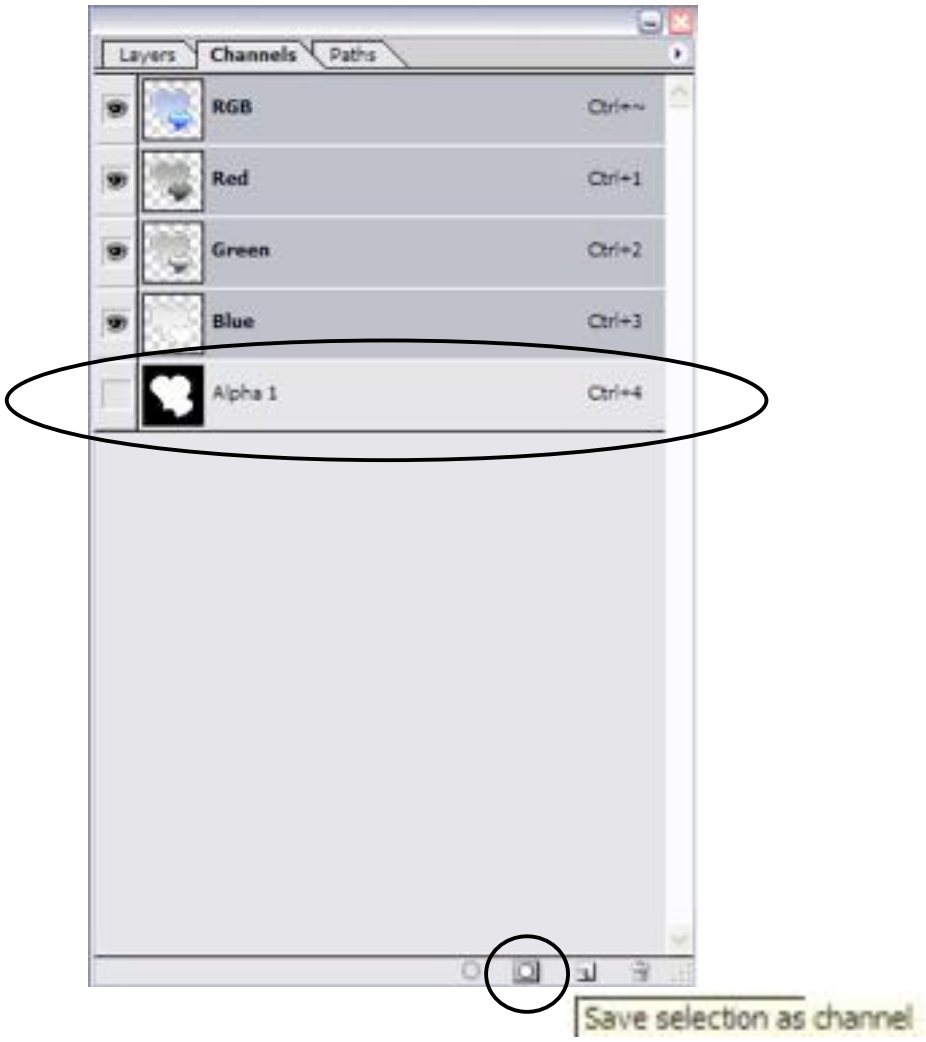
2. Click in the transparent area (the checkered board pattern) of the file. This will select the transparency. A dotted lined will appear around your image.

3. Select the inverse of the image by going to the **Select Menu,** then **Inverse.**

4. Select the **Channels Tab** from the Layer Window.



5. In the lower right corner of the Channels Tab, click on the **Save selection as channel** button. You now have created an alpha channel. The Channels Tab will show the new channel, as shown below.



6. Save your file by selecting the **File, Save As…** menu. Change the file **Format** to **Targa.** Select **32 bits/pixel** under the Options Window (so the transparency layer gets saved). **Name** your file, **Choose** your directory where the rest of your Broadcast Pix graphics are saved (C:graphics\) and click on **Save.**

7. Import/Add your file to your show using PixMaster, as described in section 3.

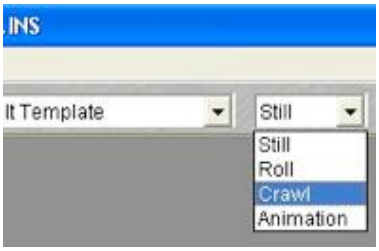
5.3 CG Rolls and Crawls

CG graphics can also be created to roll vertically or crawl horizontally, and then later controlled by Broadcast Pix to a custom speed setting. Ideal for making a credit roll or a ticker at the bottom of the screen.

5.3.1 To create Rolls/Crawls

1. Click on the **Inscriber icon** on the desktop to start the Inscriber application.

2. Select **Roll** or **Crawl** on the drop-down menu to the right of the template palette menu as shown in the illustration.



3. Type in the desired **text**. Note that a blue scroll bar appears below the text to indicate where in the crawl you are. You may also add graphics to your roll or crawl, which will move with your text.

4. Once finished, on the **File** menu, select **Export, Roll/Crawl as Images**, and the following window appears

5. Select Save As Type to: **Targa (.TGA)**, enter a file **name** and save to C:\\graphics\cg\
then press **save**, and it will appear as shown.

6. Add roll/crawl to your show using PixMaster. Note: Even though multiple files were created, only one file will be visible/added to your show.

5.3.2 Playing a Roll or Crawl

1. If not already done, assign the CG to the desired keyer by pressing its **[Key Selection]** button and select the CG button in the **[source]** row.

2. Assign the Device Controls to the CG by pressing the **[CG]** button.

3. Select the desired CG file that you wish to roll or crawl, by pressing its **[PixButton]** on the CG PixPad. Be sure that the file has been added to your show, using PixMaster.

4. Bring the CG page to either preview or program using the keyer control described in section 4, and the first page of the roll or crawl will be shown.

5. The CG graphic will begin to roll or crawl when you press the **[>]** button in the motion control section, and its timecode will show in the display.

5.3.3 Motion Controls for Rolls and Crawls

Ensure that the Device Controls are assigned to CG by checking in the top left corner of the display and seeing if it says CG. (If not, press the CG button). The motion controls will only control the motion of the device assigned to the Device Controls.

To start a CG roll or crawl playing, press the **[>]** button 

To pause it, press the **[>]** button again (and its timecode in the display will show the frame paused on) 

To start it playing again from a pause, press the **[>]** button again 

To rewind it to the beginning, press the **[I<<]** button 

To change the speed of the roll or crawl see the next section.

NOTE: If you have a roll on air, and you attempt to switch it on-air to a crawl, then you may get a brief glitch on air. This change should be made off air, or one should define a second channel of CG for the crawls. (Similar issue if you have a crawl on air and attempt to switch to a roll.)

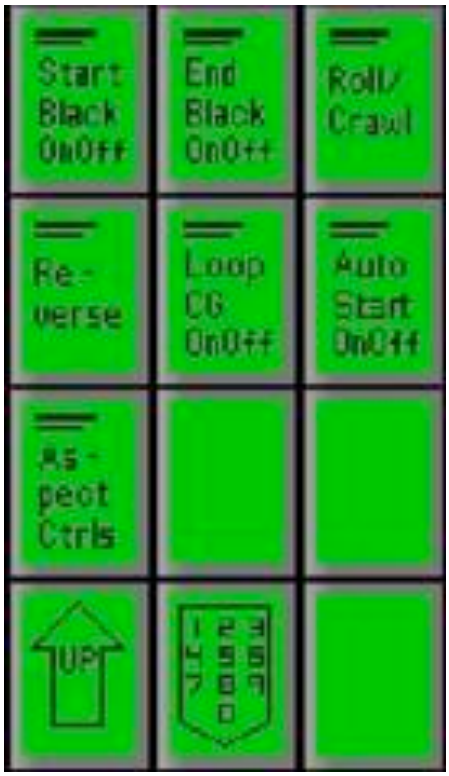
5.3.4 Modifiers for Rolls and Crawls

Modifiers may be applied to rolls and crawls. These include changing a roll to a crawl, adding a blank page at the beginning and/or end, setting it to loop, setting it to auto-start when taken to air, changing the direction, changing the aspect ratio and changing its speed.

To modify a roll or a crawl:

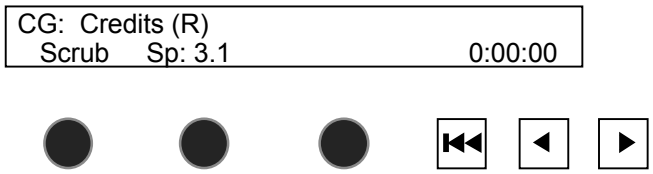
1. Press the **[CG]** button to bring up the top page of CG controls on the PixPad, if they are not already up.

2. Press the **[Controls]** PixButton, which will bring up the following PixPad of Modifiers:



CG Controls PixPad

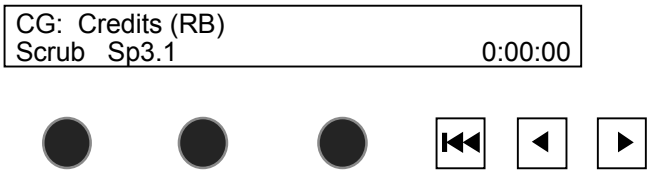
3. You can always view which modifiers are present on the a CG graphic by viewing the display on the control panel (or SoftPanel). These modifiers are always displayed when you select a CG graphic in parenthesis after the name of the selected CG graphic, in the same way that clip modifiers are shown for clips. When the CG graphic is first created it has a (R) for roll, as a default, as shown below for the CG title in this illustration called Credits. These modifiers are also visible on the Multi-View.



4. To change a roll to a crawl, press the **[Roll/Crawl]** PixButton on the CG Modifier PixPad. The (R) in the display will change to a (C)

5. To change a crawl to a roll, press the **[Roll/Crawl]** PixButton on the CG Modifier PixPad. The (C) in the display will change to a (R)

6. Sometimes it is desired to have the roll or crawl start out of view. This way when you bring it to air it is not present, until you start it with the [>] button. To add a blank (black) page to the beginning of a roll or crawl, press the **[Start Black on-off]** PixButton on the CG Modifier PixPad. The letter (B) will be added to the modifiers in the display to let you know that a blank page has been added to the beginning, as illustrated below:

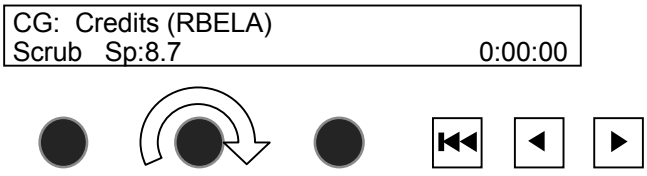


7. To add a blank (black) page to the end of a roll or crawl, press the **[End Black On-Off]** PixButton on the CG Modifier PixPad. The letter (E) will be added to the modifiers in the display to let you know that a blank page has been added to the end. You can add blank pages to both the beginning and end if desired.

8. To set a roll or crawl to continuously loop, press the **[Loop CG OnOff]** PixButton on the CG Modifier PixPad. The letter (L) will be added to the modifiers in the display to let you know that it has been set to loop.

9. On of the most powerful modifiers for rolls an crawls is auto-start. This sets the roll or crawl to auto-start when taken to air, rather than starting it manually with the [>] button. To set a CG graphic to auto-start, press the **[Auto-Start On Off]** PixButton on the CG Modifier PixPad. The letter (A) will be added to the modifiers in the display to let you know that it has been set to auto-start.

10. To change the speed of a roll or a crawl, turn the middle knob marked **Sp** (Speed), as shown below. The speed in pages per second will appear above the knob. This illustration also shows a CG graphic with many modifiers set. To make a roll/crawl run faster turn the knob to the right, to make it run slower turn it to the left.
You can dynamically change the speed on a roll/crawl any time, giving you greater flexibility for your roll/crawls.



NOTE: When playing a Roll or a Crawl, Broadcast Pix does not auto-detect if the CG is a Roll or Crawl, it will always default to C for Crawl. It will be necessary to manually change your files accordingly.

5.4 Creating an Animated CG Graphic

The Inscriber CG supports a complete range of animated titles and effects, including an drop, rumble, squish, topple, flip and many more in both 2D and 3D. These also use handy templates that can rapidly create an animated title, and are easy to customize.

The Inscriber operators manual contains much more detail on animations. The basics are covered here in this Broadcast Pix system manual.

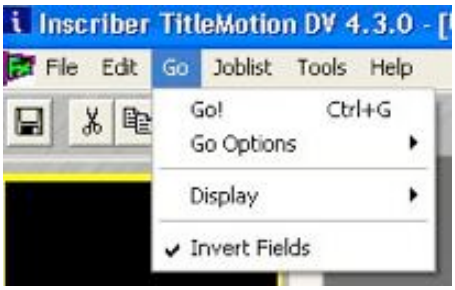
5.4.1 To Create an Animated Graphic

1. In Inscriber, as you would for any CG graphic, select the default template or another template you wish to use, type in your text and perform any modifications to it.

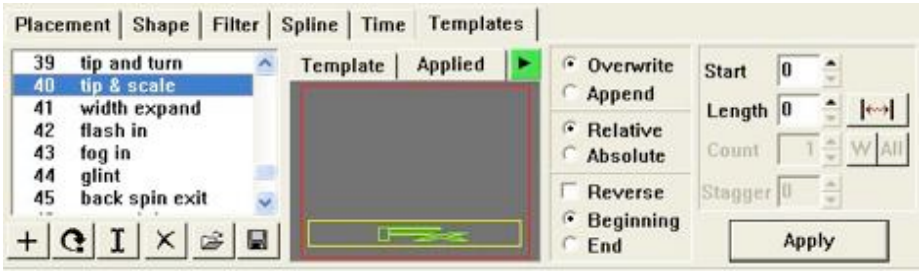
2. Change the **Text Type** to **Animation.**

3. Click on the **Animate Button**, as shown (the button with the wavy arrow and small A) to activate the FX Controls.

NOTE: Be sure that Inscriber animations are set to the correct Invert Fields setting, which for NTSC (525) is checked and for PAL (625) is unchecked. These are set at the factory, and should be OK, but you can check, by clicking on the **Go** menu, and checking (or checking) as shown below:



4. Select an animation template from those shown at the bottom, For example, you might select **tip and scale** as shown below.

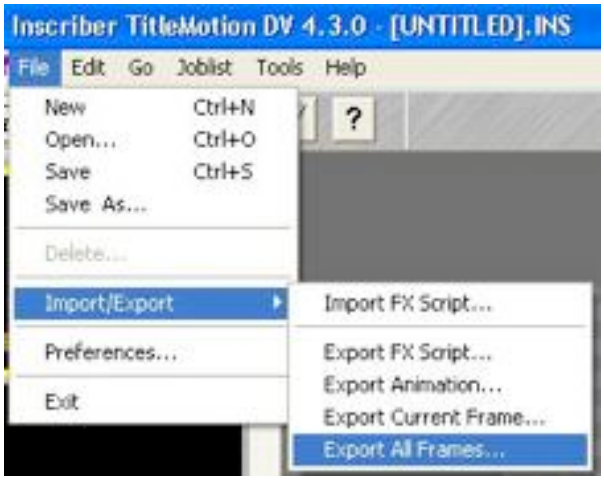


5. You can sample this animation by pressing the green **[>]** button. If you like it, click on **Apply** as shown above.

6. If desired, you can move the animation movement points for the chosen animation by clicking on them in the large window showing your text, and dragging them to another location. You can also add key frames and adjust the timing of animations in the various controls tabs on the bottom of the screen.

7. You can preview the animation at any time, either using a wire-frame view, which is quicker but does not provide any graphical information, or a full-quality view, which is slower than real-time but provides and accurate representation of the file animation, by selecting the preview buttons on the canvas.

8. Save the animation by clicking on **File**, and then a drop down menu appears and click on **Import/Export**, and then **Export All Frames**, as shown below:



9. In the window shown below, insure that the file type is set to **TGA, Truevision** as shown, and indicate the **folder name** where you want to export your animation to. It is recommended that you save it on your D drive, in a folder that you create called animations, and then in a sub-folder that you create. It is suggested that you name this sub-folder the name you wish to give to the animation. These folders can be created from this window, by clicking on the new folder icon.

   In the illustration shown below, the name BPS tip & scale was given to the folder in which this animation is to be saved.

10. Click on **OK** and the animation will be rendered (a series of Targa files will be saved) to the place you have indicated.

    After the animated title is exported from the Inscriber CG, it must then be converted into a clip for play out, as described on the next page.

5.4.2 Importing an Animated CG Graphic into Broadcast Pix

After an animated title is created and exported, it then must be converted into a clip for play out by the Broadcast Pix Clip Store. The animation is exported by Inscriber as a sequence of individual Targa files, one for each frame in the animation.

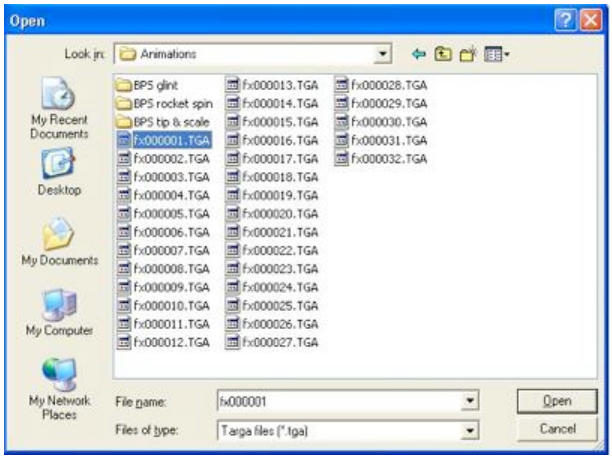
Full page animations that do not contain an alpha channel (a transparent background) are converted into one .bpv file (Broadcast Pix Video file).
Animations that do contain an alpha channel are automatically detected by Broadcast Pix, and in doing so are converted into one .bpa file (Broadcast Pix Alpha file).

It is recommended that animations not be imported while a show is on-air, and instead be done during pre-production, although this function is allowed.

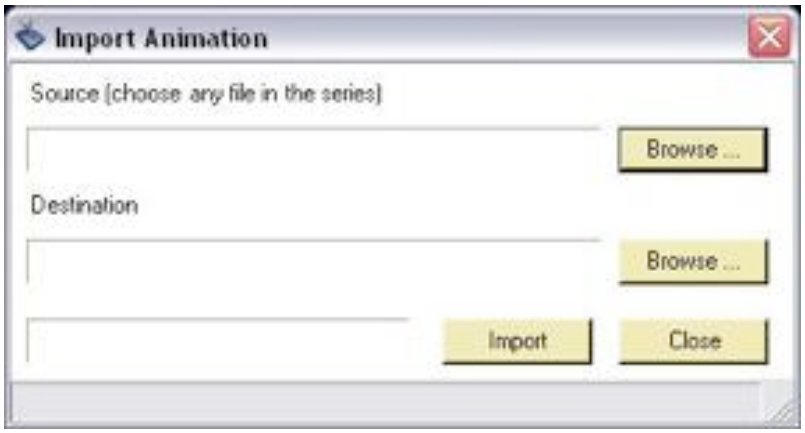
To import an animated CG:

1. On the **Capture** drop down menu of the Broadcast Pix Switcher application, select **Import Animation** as shown:

2. The Import Animation window will appear, as illustrated on the next page. In the Sources section, **browse** to the place where you stored your folder containing your animation, and **select** any one of the many individual targa images for the desired animation, as shown:



3. In the Import Animation window, **Browse** to a Destination location where you want to save the animation file to, D:\\clips . Give it a **name** and then press **Import**. This will covert all the individual Targa files into one file, which can be played through the clip store of Broadcast Pix. If the status bar does not start within 30 seconds, then the animation file was not exported correctly.



4. Once completed, the status bar will display **Successfully Completed.** You may continue to import more animations or you can click **Close** to exit the Import Animation function. After you've imported your animations you may delete the original .TGA image sequence, as those files are no longer necessary.

5.4.3 On-Air Operations for CG Animations

The animation file can now be added to a show into the clip store channel, just as if it were a clip.

CG Animations operate exactly as clips, except if they have an alpha channel they operate in a key layer on top of a background image.

All Clip controls work on CG animations, including:
- Setting the CG animation to auto-start when taken to air
- Setting mark-in and mark-out points
- Setting it to loop, which is good for creating moving texture graphics
- Using the motion control to play, pause or rewind an animation

Since all of these clip controls work identically for CG animations, please see the section 6 of this manual for more on these controls.

NOTE: If you want audio to play at the same time as your animation, then create a .wav file of the same name as the animation and store it in the same location as the video file on the D drive, (for example team.bpv and team.wav). The .wav file needs to be PCM Data 16 bit at 48 kHz.

5.4.4 Creating Animations in 3rd party Applications.

Inscriber makes great animations, but you can use many popular animation applications including Digital Juice, Art Beats, Adobe After Effects, Apple Motion and others to make animations for the Broadcast Pix system. In general, any animation system that can export a sequence of frames of images will work, as these frames can be brought into the Broadcast Pix systems and converted into .bpv or .bpa file, as previously described.

For example, for creating an animation in Digital Juice:

1. Select the Jump Back or other Digital Juice graphic you want.

2. Set your Digital Juice controls to output a sequence of files.

3. Set the file type to be Targa*, with the right number of frames per second (depending on whether you are in NTSC/525 or PAL/625.)

4. Run Digital Juice to create the animation sequence.

5. Import the animation into Broadcast Pix just as if it were coming from Inscriber, see section 5.4.2.

- Other formats can also be used. You do not have to use Targa files, as the system will also import a series of .bmp, .jpg or .png files.

NOTE: If you are creating animations with alpha channels make sure to save files as 32 Bit Targa files to preserve the transparency layer.

All image sequences need to end with a number starting with “0” in order for the Import Animation function of Broadcast Pix to work properly.
(i.e. Animation000000 or Animation2_000000)

If the status bar in the Import Animation function does not move after 30 seconds of importing, then your files/file names have not been exported correctly.

5.5 Basic CG On-Air Operations

The unified control architecture of the Broadcast Pix system manages all content devices the same way. For example, once you learn how to control CGs, you have also learned the basic elements of how to control Stills, Clips and Logos. CG and Clips have more modifiers/controls since they involve motion, where as Stills and Logos only have aspect ratio controls.

To operate the Character Generator, substitute “CG Graphic” for Clip and read

Section:	To learn how to
6.2	Assign the device controls to the CG (CG PixPad is shown below)
6.3	Select a CG graphic by Name
6.3.1	Select a CG graphic by Number
6.3.2	Select CG graphics with a mouse
6.3.3	View more CG graphics in the Multi-View

CG PixPad

5.6 Updating CG Graphics On-the-Fly

If you wish to change a CG or other graphic during a live production, such as to change the name of a guest on a talk show, you can overwrite an existing CG in the memory for the show. While this does not always require a second graphics operator to do, frequent changes are best handled by a second operator.
There are three ways of editing titles on the fly:

- .ICG Editing
- Overwriting a file
- CG Connect (see section 5.9)

5.6.1 .ICG Editing

An .ICG file is an editable Inscriber file, which preserves all the data and layer information of one graphic file. .ICG editing provides for rapid overwriting of files, even if the file is on program/preview.

To Activate .ICG Editing:

1. Create an Inscriber file in TitleMotion Pro, and export it as an .ICG file as described in section 5.2.1.

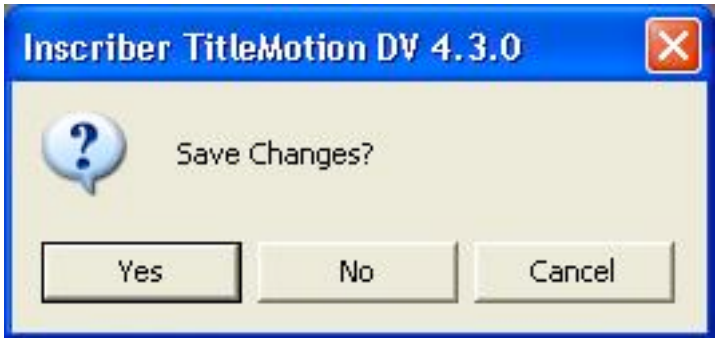
2. In BPswitcher, go to **Setup, Engineering Settings, Allow Fast ICG Editing.** As shown below.

NOTE: The Broadcast Pix Switcher has two editing speed, fast and normal. Fast leaves the Inscriber open so it comes up quicker. Normal leaves it off. Select the desired speed on **Setup**, and select **Enable Fast ICG Editing** if desired.

3. On the Multi-View you will notice that the CG PixPad will have green text underneath its thumbnail, this represents an .ICG file.
Right Click on the thumbnail of the graphic you wish to edit, and it will automatically open in Inscriber.

4. In Inscriber, apply your changes as needed.

5. Close Inscriber by clicking on the **red X** in the top right corner, and the following window will pop up.



6. Click on **Yes**, and the graphic will update with your desired edit, even if it is currently on program/preview.

5.6.2 Overwriting a File

Another way to update a file that is currently in your show is to simply overwrite the file using standard Microsoft Windows. This may be desired if you have the Broadcast Pix workstation plugged into a separate local network, where files can be shared and saved.

To Overwrite a File:

1. Create a CG in either Inscriber or any other graphics application.

2. Export the graphic with the same file name and file extension as the one you wish to replace, i.e. .TGA, .JPEG, .BMP

3. Save the file in the same location as the current version. C:\\graphics\cg
And click on **Yes** when asked to **Replace/Overwrite** the existing file.

4. The file will automatically update, glitch-free, on program/preview.

5.7 Dual CG

The Broadcast Pix Switcher software enables a second channel of CG to be used in a show. This enables two CG graphics to be displayed on-air at once, one in its own keyers, taking up 2 Keyers.

To have two channels of CG in a show, in PixMaster Show Editor simply dedicate two sources to CGs. They may have different content of CG titles assigned, or each access the same content.

Both CG channels may have still images, or one can play a roll or a crawl while the other is holding a still titles or both can be playing a roll/crawl.

To transition between two CG channels, simply deselect the **[BKG]** button in the transitions controls and select the Key channels you wish to effect.

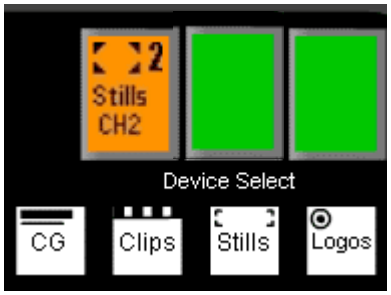
5.8 Still Store and Logo Operation

The unified control architecture of the Broadcast Pix system manages all content devices the same way. Once you learn how to control the Clips Store, you have also learned how to control the Still Store, CG Store and Logo Store.

For example, to operate the Still Store, substitute Still for Clip and read section:

Still Store PixPad

Up to 2 Channels of Still Stores can be specified in a show, using the Wildcard Device PixButtons, see 2.6 And only one channel of Logo Store.



5.8.1 Preparing Still Content

The system will accept stills in several formats, which can be saved out of Inscriber or any other graphics application:

1. Bitmaps, which are picture files ending in .bmp
2. Targas, which are picture files ending in .tga
3. As well as .jpg, .gif, .png

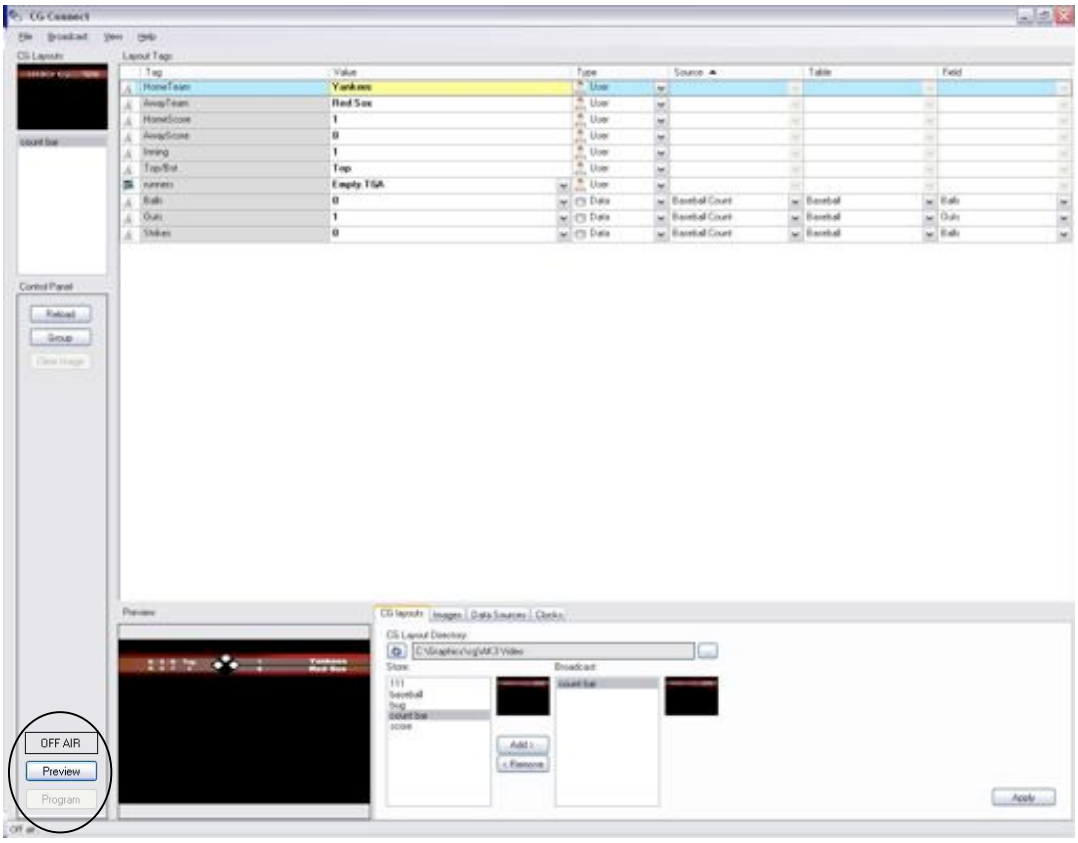
The system accepts NTSC or PAL pictures. For full screen stills this is 720x486 pixels for NTSC and 720x576 for PAL. The bit depth of a .bmp still must be 24bits or higher. The bit depth of a .tga still must be 32bits to use a key/alpha channel. The system will also accept smaller pictures or larger ones and either retain their size or modify them to fit the screen, see the import function of the PixMaster section (Section 3).

5.9 Optional CG Connect Software

CG Connect provides an interface for linking two separate data objects: Inscriber TitleMotion Pro and an external data source. It inserts text and images into Inscriber layouts and then updates and displays them on the Broadcast Pix Switcher. The text and images can be updated manually or automatically from XML data sources. This is an ideal option for sports production, where data is constantly changing, (i.e game clock and/or scoreboard) or for using as a simplified graphics station in a news or government production.

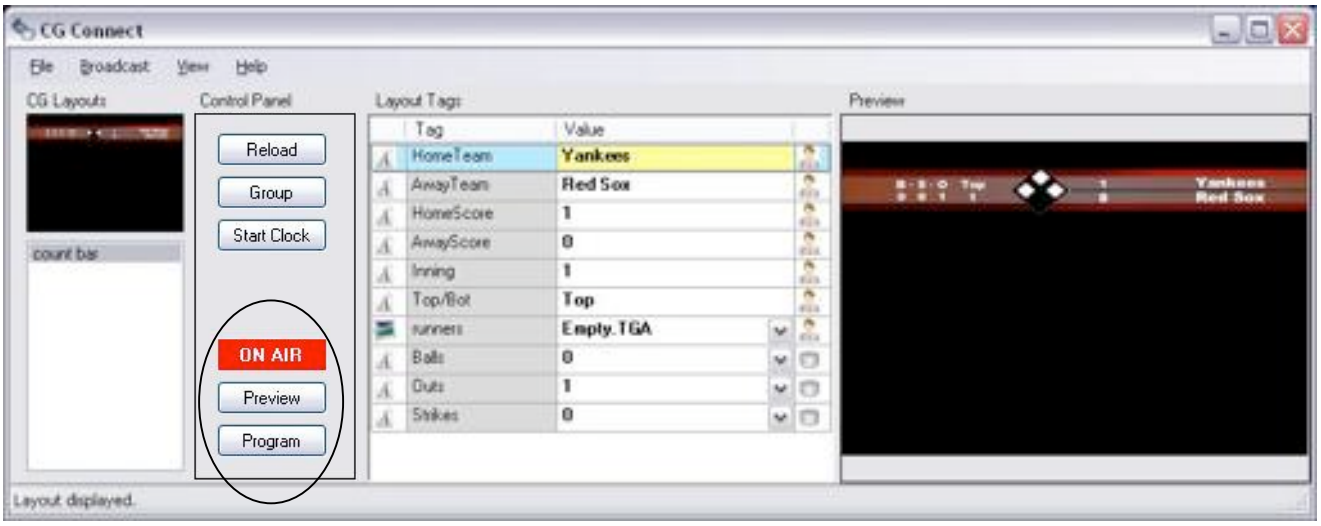
CG Connect Window Layout

CG Connect has 2 window layouts: **Setup Mode (Off-Air)** and **Operation Mode (On-Air)**, each of which can be resized to fit your monitor by dragging the lower right hand corner. You may toggle between the two modes by pressing **F12** on the keyboard.You may also float and resize the Preview Monitor by right-clicking on it, similar to the Broadcast Pix Multi-View.



Off-Air Setup Mode (F12)

You will use the **Off-Air** (gray) Mode to setup your CG Layout and to assign values to your RTX Tags. When you're in Off-Air Mode the Display button is deactivated, so no changes will go to Broadcast Pix until you enter the On-Air (red) Mode. The Preview Button is active for your to preview how the CG Layout will look before going On-Air.



On-Air
Operation Mode
(F12)

You will use the **On-Air** (red) Mode after you have setup all your RTX Tags and values in the Off-Air Mode. This view is condensed to be able to fit in the Multi-View/CG operators monitor during your production. Now both the Preview and Program buttons are active and any changes made will go onto your Broadcast Pix program. When in On-Air Mode, you may not make changes to the setup of your CG layout, i.e. XML files, images, etc. To make such changes you need to go into Off-Air Mode, by clicking on the the On-Air red button.

5.9.1 Adding the RTX Tags

CG Connect updates text fields and logo objects in the CG layout, these text fields and logo objects must be assigned a RTX tag. A RTX tag serves as a label for identifying the text fields and logo objects in CG Connect to be updated.

1. Create your CG template in TitleMotion Pro, as described earlier in this section.

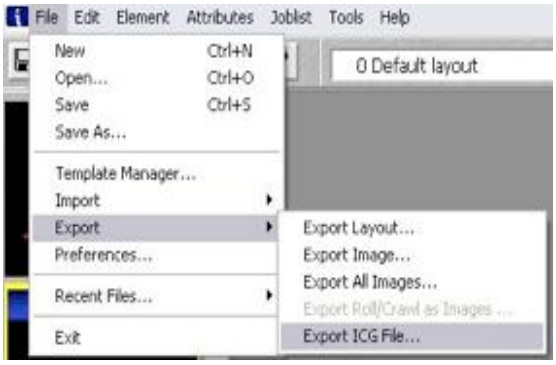
2. Select the text field or logo object in TitleMotion Pro by clicking on it. If you are selecting a text field, make sure you are on the **Text Plane** button or the **Graphics Plane** for objects/logos.

3. Select the RTX Tag settings by clicking the **News Edit** tab at the bottom of TitleMotion Pro, as shown on the next page.

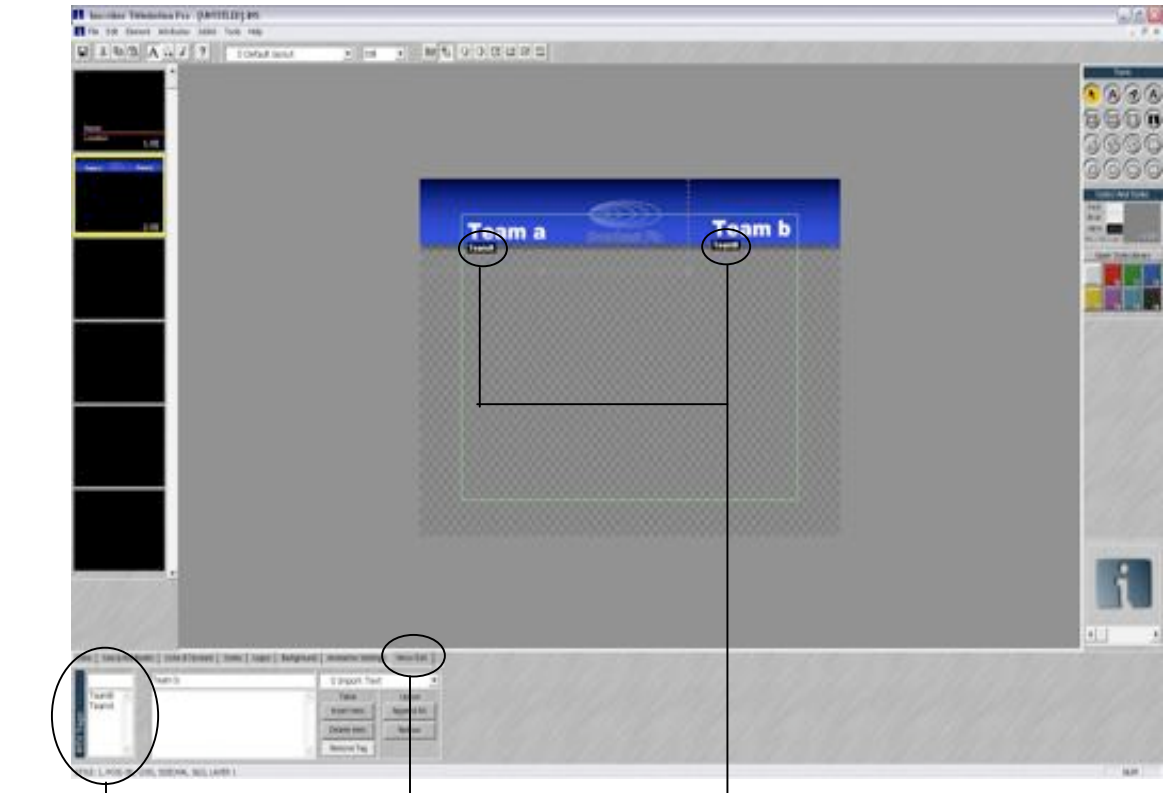
4. On the left side of the **News Edit** tab, you should see the **RTX Tags settings**. Place the mouse cursor in the text field at the top left of the tab and **enter** a new RTX Tag name for the selected text field or logo object. You can enter any name you like as long as it has not been used by another tag name already.

5. Hit **enter** on keyboard to assign the tag name. The new RTX Tag should now appear in a small black box in the bottom left of the text field or logo object on the canvas, see on next page. If you do not see the RTX Tag, make sure that RTX Tags are enabled by going to the **View** Tab, and place a check next to **RTX Tags,** in the **Markers** section.

6. Export your CG layout as an .ICG file, saving it in the **cg folder** in your C drive with the rest of your CG graphics for Broadcast Pix, and add the file to your show through PixMaster, as described in section 3.



NOTE: It is important to create your CG Layouts in they way you would like them to appear on air. The only content that CG Connect will change are the RTX Tag values. No Color, Font or Sizing attributes will be effected.



RTX Tag Settings News Edit Tab RTX Tags on Text Planes

5.9.2 Loading CG Connect with a Layout

1. Double-click the **CG Connect** icon on the desktop.
   (make sure the green USB dongle is installed prior to launching CG Connect)

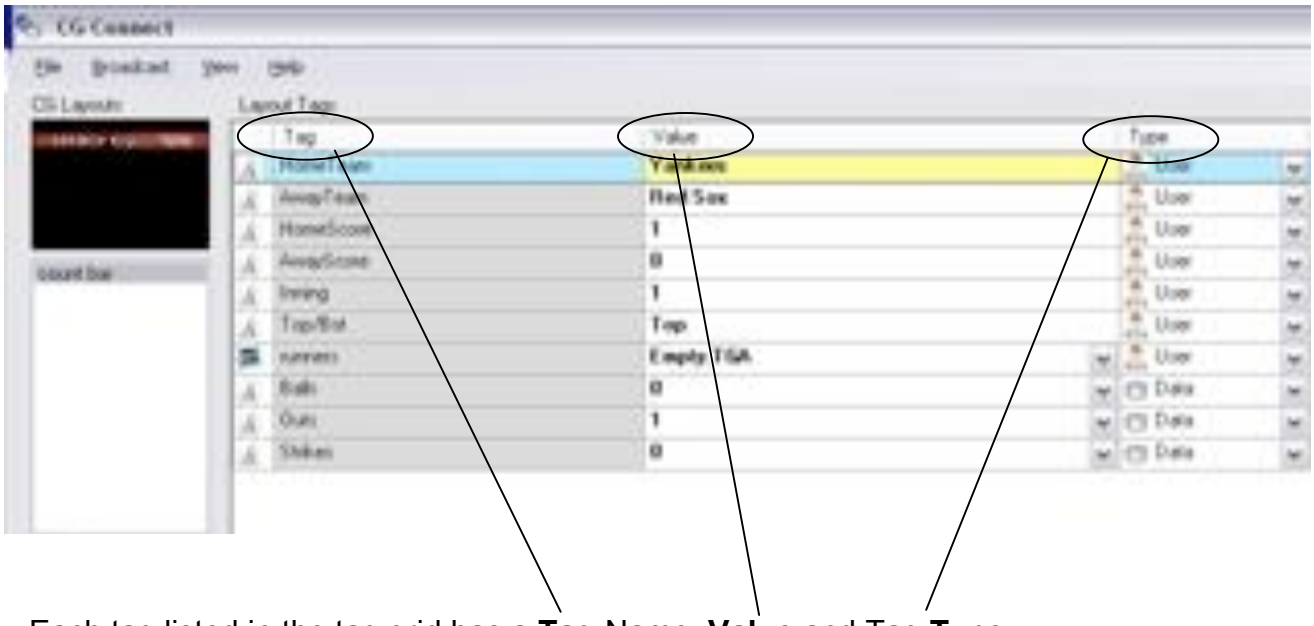
2. While in the **Off-Air Mode**, select the **CG Layouts** tab on the bottom right of the screen and browse to the directory containing the CG layout by clicking either on the layout directory label or the browse button next to it.
   The directory for the most part will be C:\\graphics\cg, once selected click **OK.**

3. CG Connect will list all the .ICG layout files contained in that directory in the CG Layout Store list (the left side). Choose the layout(s) that you want to update from this list and click the **Add** button. This will add the layout to the CG Layout **Broadcast** list (the right side). Click the **Apply** button to commit your changes and the layouts will now appear in the layout list in the top left of the program next to the tag grid. You can also remove a layout from the Broadcast list by selecting it and clicking on **Remove.**

4. Now any layouts that are loaded in the **CG Layouts** section can be modified by CG Connect. Simply select the layout which you would like to update.

5.9.3 Updating the CG layout

After adding the CG layout to the Broadcast list, you can select it from the main CG Layouts list in the top left of the program. After selecting the layout, a thumbnail of the layout is displayed in the top left corner and all available RTX Tags are listed in the Layout Tags grid next to it. You may have more than one layout loaded into this list, but only modify one at a time.



Each tag listed in the tag grid has a **Tag** Name, **Value** and Tag **Type**.

The **Tag** name reflects the name you assigned to the RTX Tag in TitleMotion Pro.
The **Value** is whatever text the field contains. For logo objects, the value field is empty by default, even it already contains an image.
The tag **Type** determines how the content of the assigned RTX Tag can be updated.

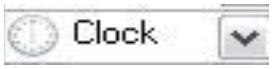
The following 3 Tag Types are available:

User: 

Allows you to manually enter text into a text field or select a list of images from a drop down list on the CG layout. This tag type is set by default for tags referencing a text field on the CG layout. After selecting this tag type, click on the value field in the grid and enter the new text you want to display. Hit **Enter** on keyboard to apply the new text.

Data: 

Allows you to connect the tag to a data source/XML file. This tag type can be assigned to either a text field or a logo object. CG Connect will detect automatically which it is and use the data from the data source to either replace the text in the case of a text field, or to reference an image in the case of a logo object. This image must have been added to the broadcast image list first. The reference to this image is done by reading the filename for image from the data source. So, if the data source contains a value “Logo.jpg”, CG Connect will look for an image with this name in the images added to the Images broadcast list.

Clocks: 

Allows you to display a clock, like the internal PC Clock. CG Connect will automatically update when the PC Clock changes. You may change the settings in the Clocks tab to display and update by the hour, minute or second as well as change the formatting.

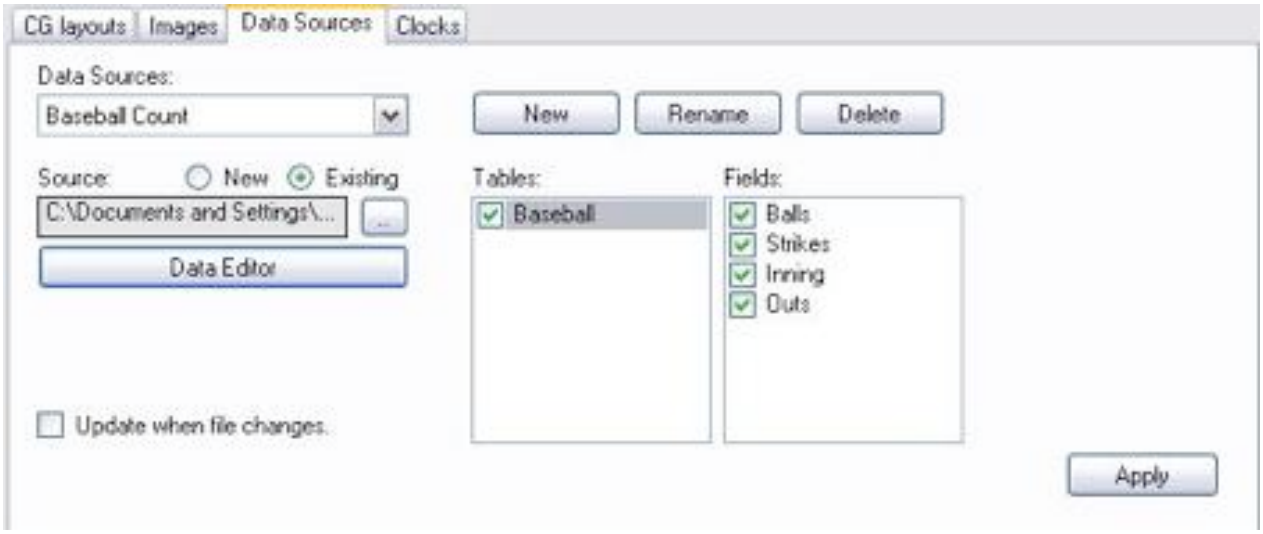
5.9.4 Adding a Data Source with XML Files

CG Connect allows you to use Extensible Markup Language (XML) files as data sources to automatically update your RTX Tags in your CG layout. These XML files can be created by an external source, from a scoreboard for example, or created manually through in the internal Data Editor function.

1. Select the **Data Sources** tab, as shown on the next page.

2. Click on the **New** button to add a new data source and give it a name. Select **OK.** Or you may select from the drop down menu from the active data sources.

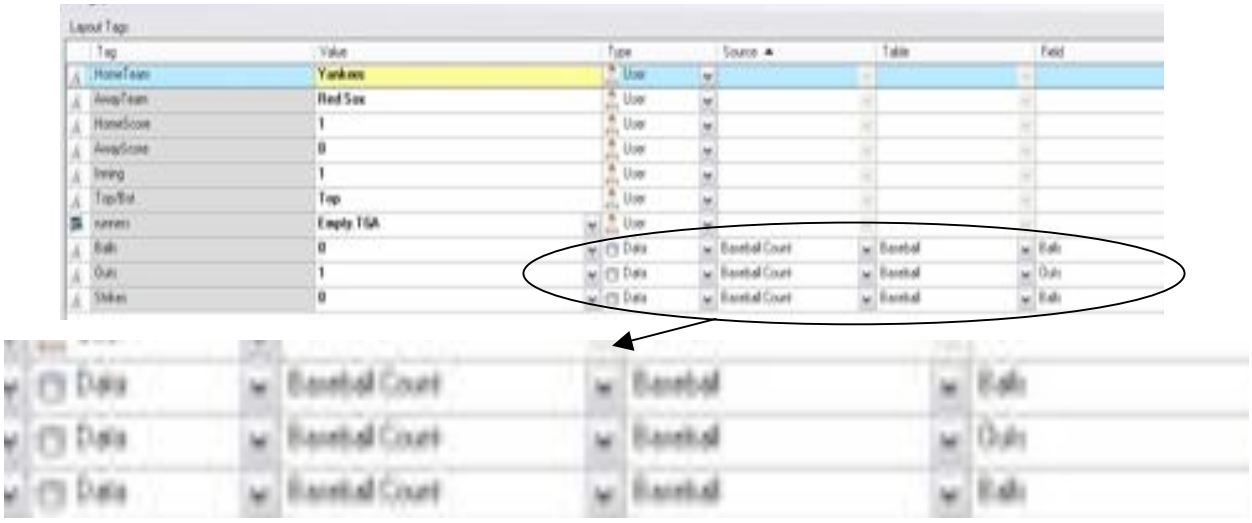
3. Click on the **Source** label or the **browse** button next to it to choose the XML file you want to use. The XML file will be loaded and tables found in the XML file are listed in the **Tables** list.



4. Choose the tables you want to use from this data source by ticking the checkbox next to the table names. Clicking on a table name lists all the fields found in this table in the **Fields** list. Choose the fields you want to use from each table.

5. To make the data source changes available to the CG Layouts, select the **Apply** button. This will now make the checked Tables and Fields available to your CG Layouts.

After adding a data source and changing the Tag Type to **Data** in the Layout Tags grid**,** you need to choose the data source from the **Source** field. A drop down list will appear with all the active data sources, be sure to select the appropriate one. After that you can choose the data table and data field that you want to reference by choosing them from the **Table** and **Field** fields in the grid. As shown below.
The **Value** field will now consist of a dropdown list containing all the record data for the selected table and field, all of these values are being reference to your original data source/XML file.



Tag Groups

Choosing a value from a dropdown list will by default only update the value for that tag field. If you want all fields for the selected data record to update as well, you can do so by placing these tags in a tag group. This technique is useful for updating a lower third graphic when you want to change the name and title of your CG all at once.

To Group Tag Fields:

1. Select all the related tag fields by holding down the **Ctrl key** when clicking on a tag fields you want to group.

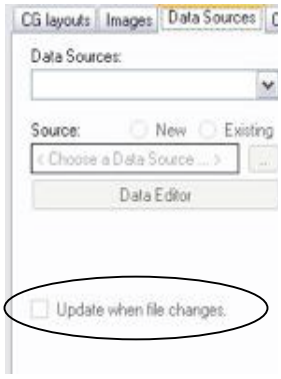
2. Press the **Group** button in the Control Panel to create a new tag group. This will group all the tag fields into a grouped section.

Now, when picking a new value from a tag field that is connected to a Data Source, all the other tags which are both in the same tag group *and* that reference the same Data Table and Data Field will update with the data from the same data record.

Automatic Updating

To have data from an XML file automatically update when the XML file changes, select the **Update when file changes** checkbox on the Data Source tab for the Data Source you want to have update automatically and press the **Apply** button.

Now, anytime that data source file changes, like from a scoreboard, those changes will reflect on-air in Broadcast Pix without having the need to select Program.

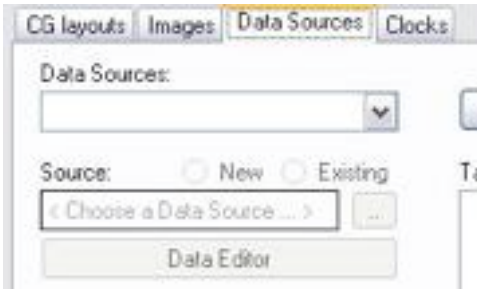


NOTE: When choosing automatic update, only the first record in the XML file can be updated. Therefore, you would generally only enter a single data record in this XML file and have your external source update this record with the new data you want to display on the screen.

5.9.5 Creating Your Own XML File

You can write your own XML file to use with CG Connect using the simple built-in Data Editor function. This is ideal for updating one layout multiple times, like changing a name in a city council meeting or changing a player's name in a sports game.
An XML file consists of Tables and Fields. Tables are the headings of your data, and Fields are the actual names of your data, which will appear on air. For example a council meeting may have a Table named 'Selectmen' and within that table 2 fields, 'Name' and 'District'.

To create your own XML File:



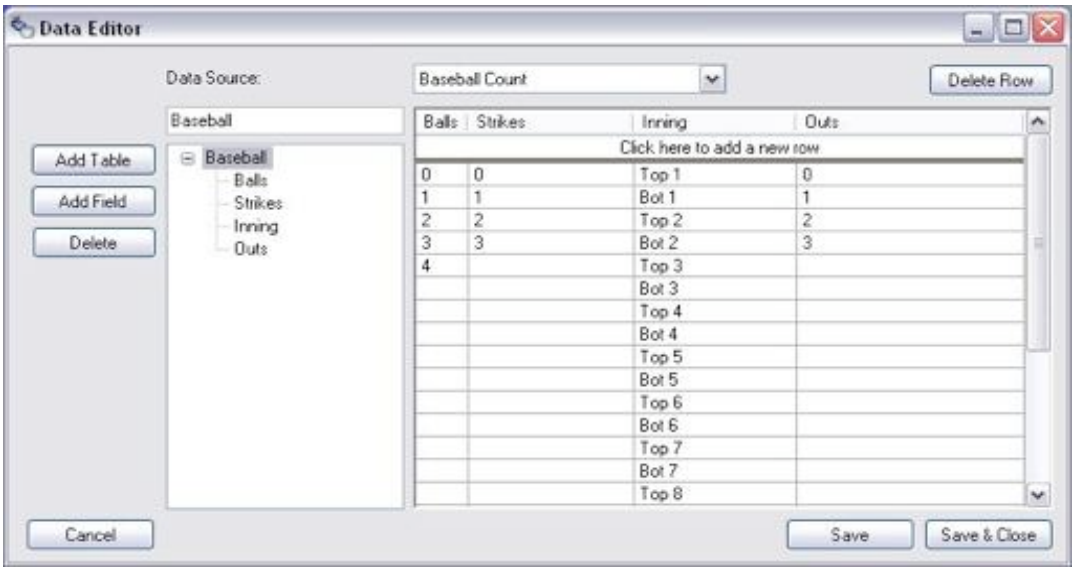
1. Select the Data Sources Tab, as shown.

2. Click on the **New Button,** in the Source section.

3. Click in the blank section underneath the New Button to save your XML File.

4. Give your file a name, and save it in a directory location.

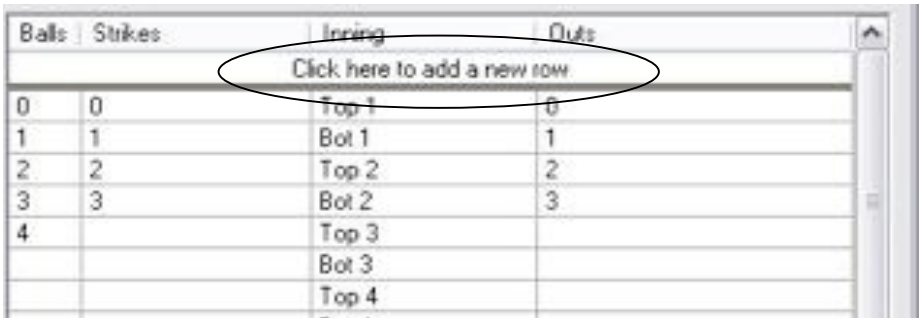
5. Click on the **Data Editor Button**. This will bring up the Data Editor Window, as shown below.



6. Click on the **Add Table Button** to add a heading. This will add a Table to the section to the right. You may name your field here, by clicking on it, then typing in the box above it, make sure to hit Enter on the keyboard to apply your name. All your fields will be listed below your table. To delete a Table click on the Table and select **Delete.**

7. Click on the **Add Field Button** to add the name of your data. You may name your field here, by clicking on it, then typing in the box above it, make sure to hit Enter on the keyboard to apply your name. To delete an entire Field (or column) select the Field and click on the **Delete** button. You may have as many Fields necessary.

8. Now you can enter the actual data that will appear on-air. Select in the top of the grid, which states “Click here to add a need row”. After you have entered all your values for each Field you must hit **Enter** on the keyboard twice for each row to appear.



9. Once you have entered all your data, click on **Save & Close.**

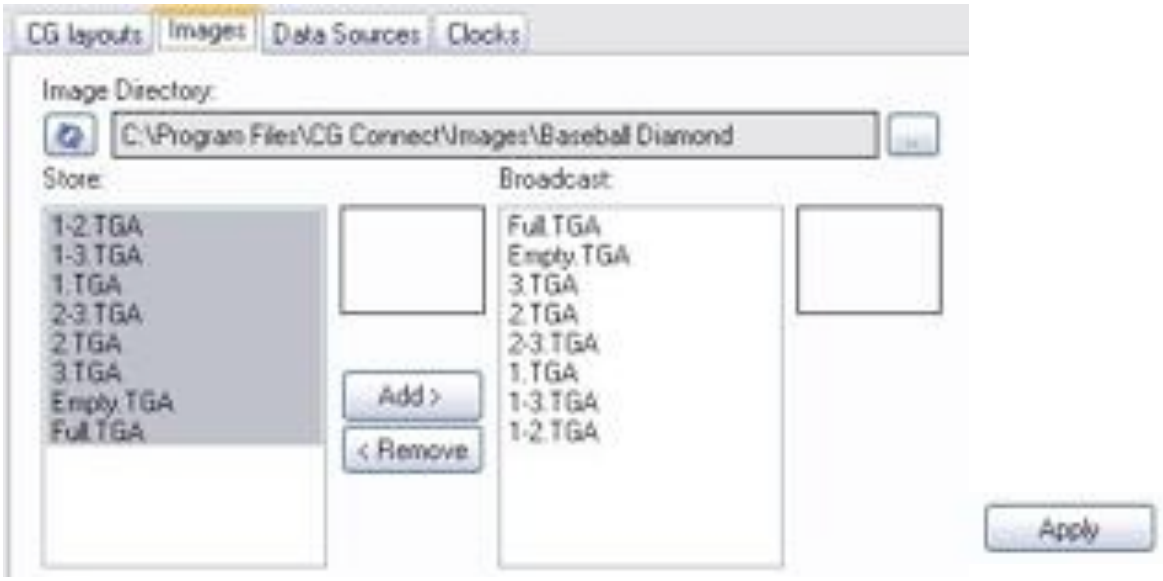
10. Now you are ready to use you custom XML file as a data source. See section 5.9.4 on how to activate your data source.

5.9.6 Using Images with CG Connect

In addition to updating text fields, CG Connect may also update graphic files. This is an ideal option for changing graphical content in a sports application, i.e. base runners position in a Baseball game. CG Connect can accept these files formats: bmp, gif, jpg, lgo, vii, pcd, pcx, psd, rle, tif, tga.
When using images in updating your CG layout, it is import to have the same file size and dimensions to avoid any alignment issue when updating.
To use images in CG Connect you need to load them as you did with you CG Layout.

1. While in the **Off-Air Mode**, select the **Images** tab on the bottom right of the screen and browse to the directory containing your image files by either clicking on the layout directory label or the browse button next to it, as seen on the next page.

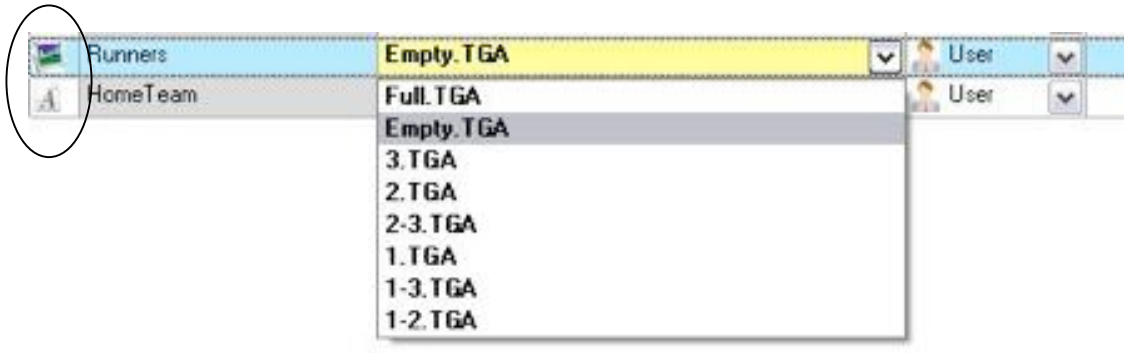
   Unlike your CG Layouts, the directory will not be the cg folder. It is recommended to make a CG Connect Images folder on your C drive, to keep your files separated from your Broadcast Pix files.



2. Similar to loading your CG Layouts, there is an **Image Store** and an **Image Broadcast** list. Select the files from the **Store** list and select **Add**, to add them to the **Broadcast** list. You will be able to see a preview in the thumbnail window to the right of each list.

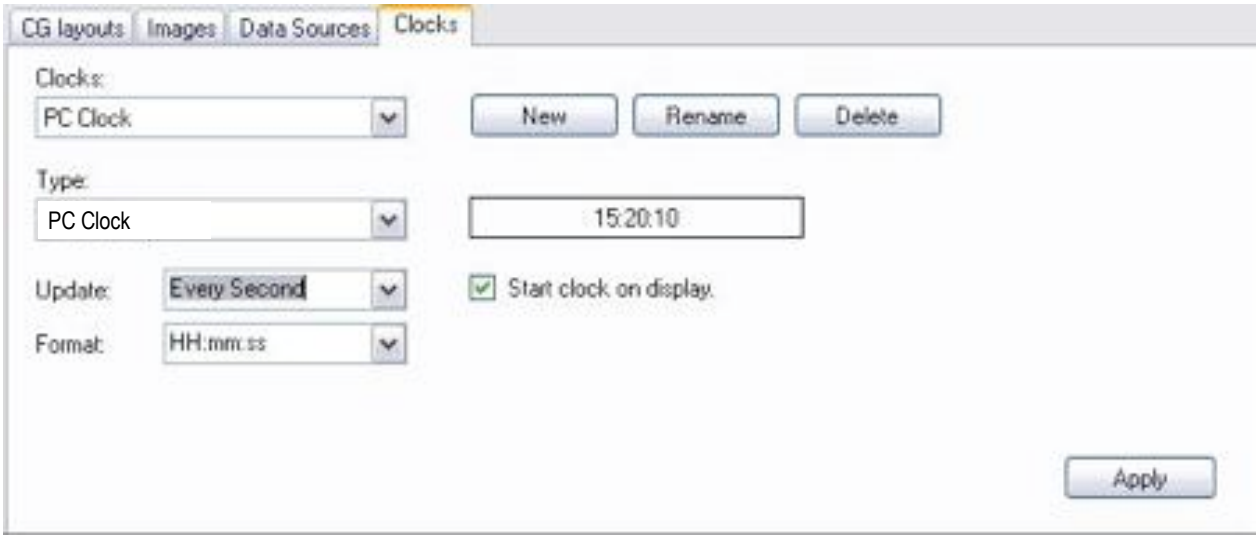
3. After you've loaded all your images to the Broadcast list, click on **Apply** to make them active in the Layout Tags Grid.

4. Now, all your images will appear in a drop down list for all your logo objects, as shown below. Your logo objects are indicated by a picture frame, where as your text fields are indicated by an 'A'.



5.9.7 Using Clocks with CG Connect

One of the unique features of CG Connect is the ability to incorporate a live updating clock with your CG layout. When creating your CG layout in Inscriber, make sure to create a text field and give it a a RTX name (probably clock), in order for CG Connect to see that field. Clocks can update every hour, minute or second and the formatting which is displayed can also be selected.



1. Similarly as you loaded you CG layouts and Images, select the **Clocks** tab in the lower right portion of the screen. This will activate the Clocks window, as shown above.

2. Select the **New** button, and give your clock a name. Or **select** an existing name from the Clocks drop down menu.

3. Select **Time of Day** from the Types drop down menu.

4. Select how the clock will update, either **Every Second, Every Minute** or **Every Hour** under the Update drop down menu.

5. Lastly, select the format in which the clock will be displayed on screen under the Format drop down menu. You may select a wide-range of formats including 24-hour or 12-hour time. The format will be seen in the space to the right of the Type menu.

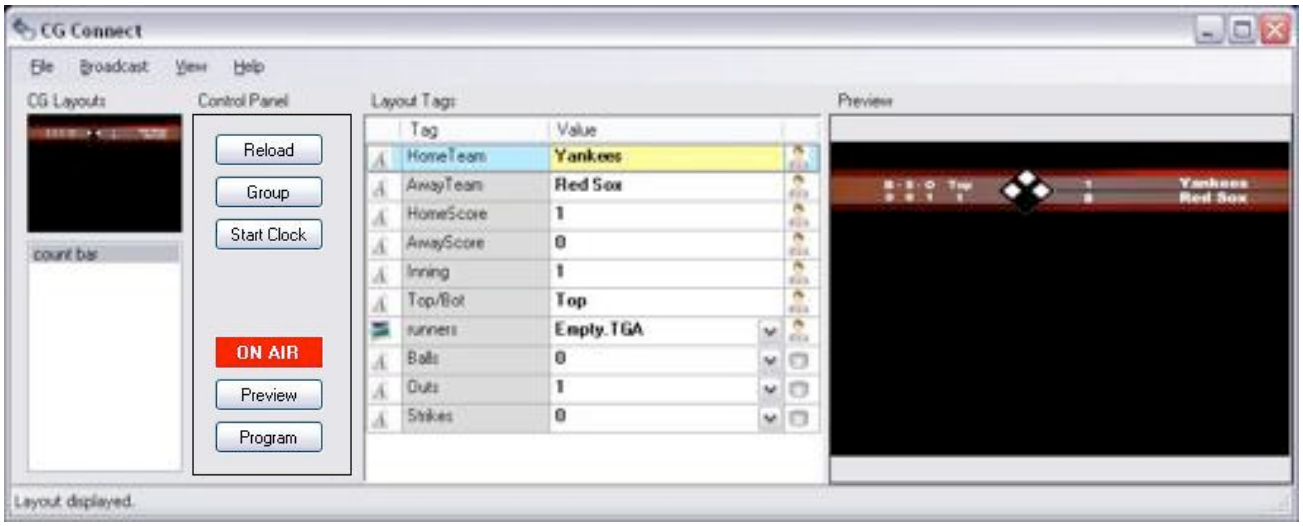
6. For the clock to automatically start when the CG layout is displayed, check **Start clock on display**. If not, you will need to manually start and stop the clock while in the On-Air mode.

7. Click on **Apply** to make your changes active in your CG Layout.

8. In the Layout Tags Grid, select the **Clocks Type** for your source. Now when you go On-Air the clock is ready to use.

5.9.8 Displaying the CG layout

After configuring the layout and updating it with new text and images, enter the On-Air Mode, by selecting the grey Off-Air button in the Control Panel (or F12 on the keyboard) and it will change to a red On-Air button.



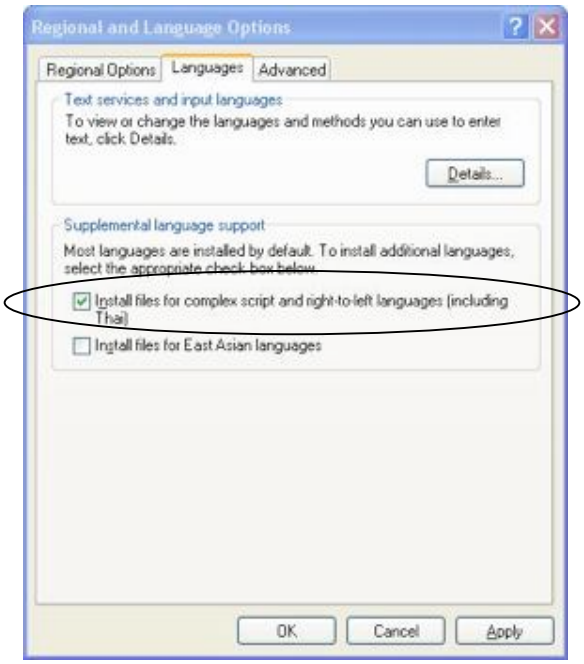
To preview the layout in the floating monitor in CG Connect, press the **Preview** button (or F6 on the keyboard) to generate a preview image of what the updated CG Layout will look like. The Preview Tab will appear showing you the image.

To commit the changes to the layout and send the CG to the Broadcast Pix Switcher, click on the **Program** button (or F7 on the keyboard) and the changes will reflect automatically on the switcher. If the CG is displayed on program by the Broadcast Pix Switcher, the changes will reflect directly on program.

5.10 Using International Characters with Inscriber

You may use international characters, such as Arabic, with Inscriber TitleMotion Pro. All the international settings are handled through Windows XP settings. It will be necessary to install files from your Windows XP CDs, which were included with your system. This example will assume that you would be using Arabic.

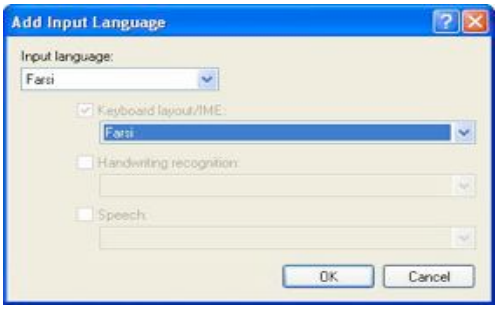
1. Select the **Regional and Language Options Window** by going to the **Start Menu, Control Panel, Regional and Language Options.** And Select the **Languages Tab.**



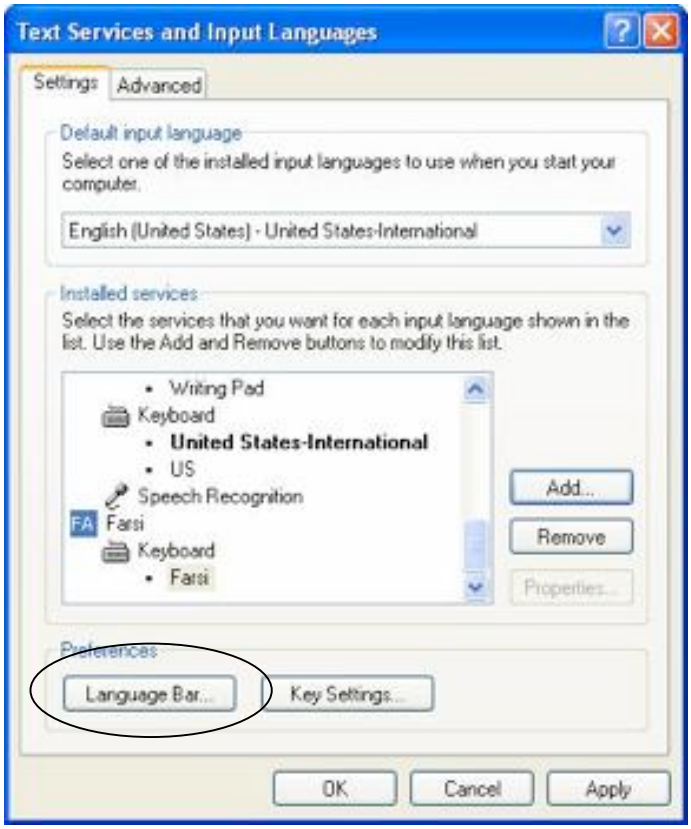
2. Place a check mark in the box alongside **"Install files for complex script and right-to-left languages (including Thai)".** As shown above.
   You will be prompted to insert the Windows Install disk and will be forced to reboot the computer after completing the install.

3. To set up your keyboard, go to the same **Regional and Language Options Window** as shown above, and select the **Details** button under the **Text Services and Input Languages section.**

4. In the **Installed Services** section select the **Add** button, which will bring the the window below. In the drop down menu select **Farsi.**



5. In the **Text Services and Input Languages Window**, click the **Language Bar** button under **Preferences.**



6. Ensure that the **Show the Language bar on the desktop** and **Show additional Language bar icons in the taskbar** boxes are checked, as shown below. And click on **OK.**

This will place a Language Bar in the Windows Taskbar, which is application specific. As you move from one application to another it will change your settings. In normal operation, it will display **EN** for English. When Farsi is enabled it will display **FA**, as shown below. (or whatever other language you have installed)

7. To change the Language Bar, Left-Click on the **EN** and choose **Farsi**. You must first select the appropriate language prior to launching TitleMotion Pro.

Section 6:
Clip Store

The Broadcast Pix system contains a clip store (digital disk recorder). Clips can be recorded onto it and then played out during a show. They are recorded in an uncompressed digital format. The clip store can also import animation sequences in many formats and play them for animated titles and backgrounds. In addition, the Broadcast Pix system can also control external DDRs, as described in section 6.8-6.9. The clip store may also play compressed clips, such as a QuickTime movie files, as described in section 6.3.4.

There is an option for the Broadcast Pix clip store which provides:

- a second channel to play 2 clips at once (standard on Slate 2100)
- more capacity to expand from 2 hours to 4 (standard on Slate 2100)

6.0.1 Audio Flow with Embedded Audio

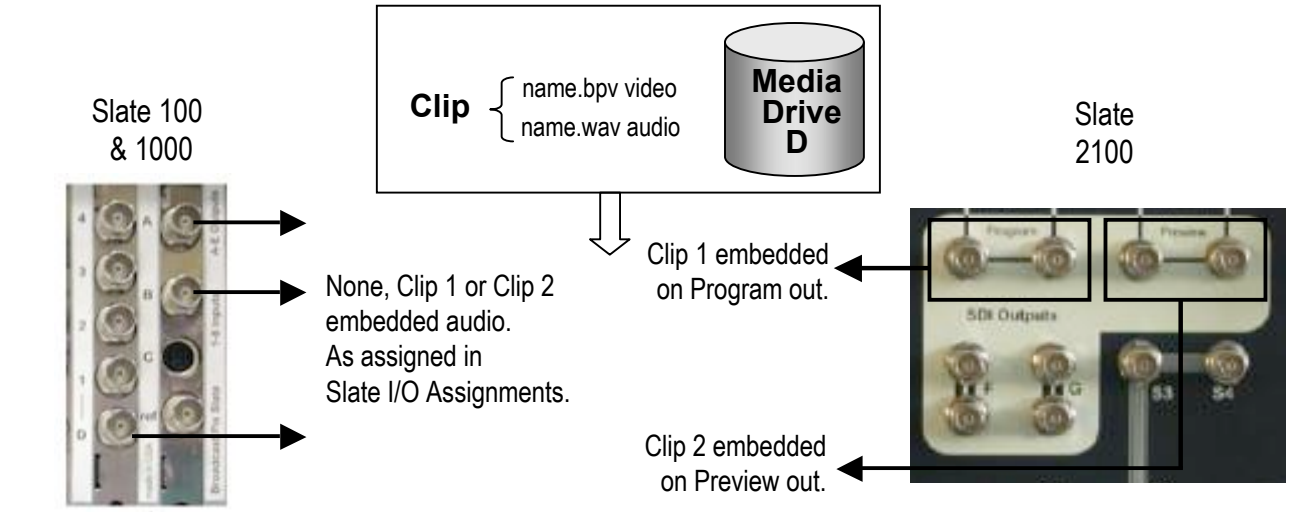
All Slate Switcher systems support the recording and playback of audio that is embedded in the SDI stream, such as from a digital VTR. On a 2100 the iBoB acts as a de-embedder. To enable embedded audio see section 1.2.7

Playing Embedded Audio

On a Slate 100 or 1000 all Slate SD-SDI video outputs can be assigned to playback embedded audio on clip 1 or clip 2, this is configured in the Slate I/O Assignments window, see section 1.2.7 for more information.

On a 2100 embedded audio is automatically outputted on the Preview and Program SDI stream on the Break-out-Box (iBoB). Clip 1 is embedded on Program and Clip 2 is embedded on Preview. If desired, you may also use the extra outputs D and/or E from the Slate cards as described for a 100/1000.

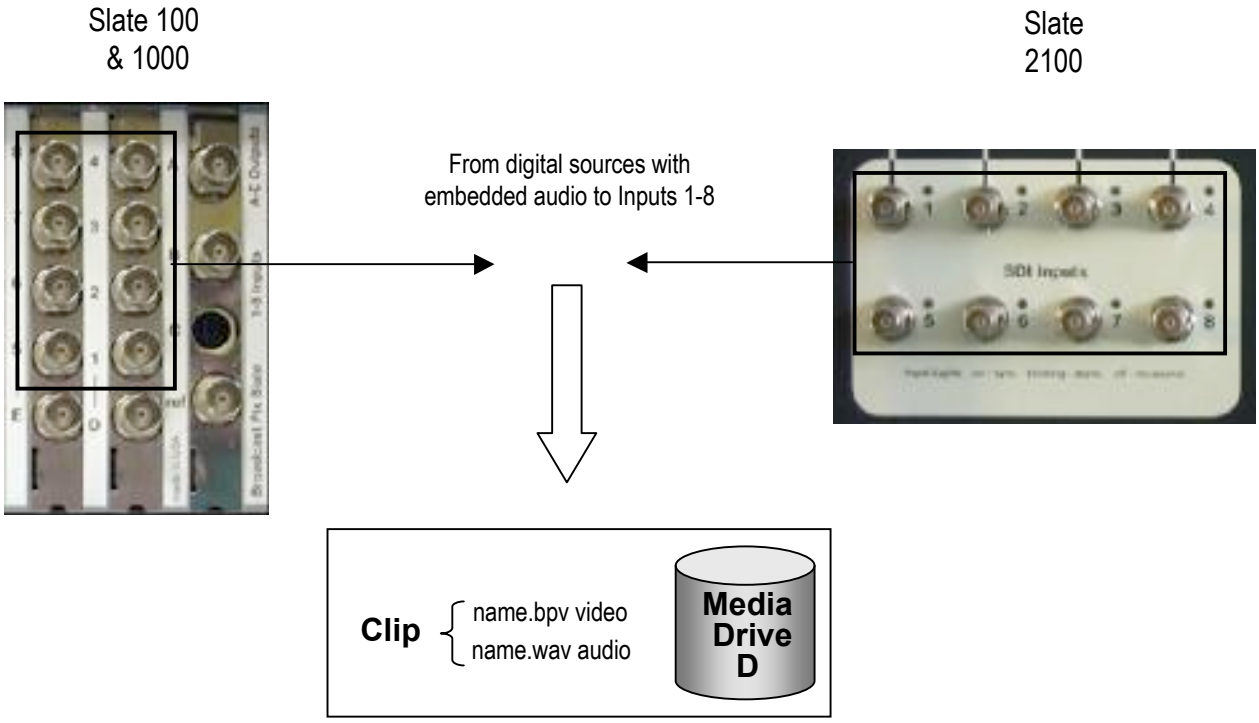
Playing Embedded Audio



Recording Embedded Audio

On a Slate 100 and 1000 all the SD-SDI video inputs, 1-8, can accept embedded audio from a SDI stream.

On a Slate 2100 only the SDI inputs, 1-8, can accept embedded audio from a SDI stream. Currently you may only ingest Inputs 1-8, the optional Inputs 9-12 can not be ingested.

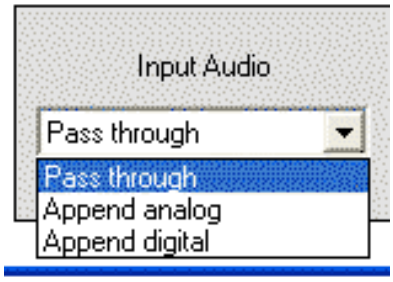


Recording Embedded Audio

The illustration on the previous page shows the flow of embedded audio during record. The video to be recorded enters the Slate boards or iBoB through any digital video input, and is recorded onto the Media Drive (D) as a .bpv (uncompressed) file. If the video being ingested has audio embedded on it, then that audio will be saved as a .wav file with the same name. You can monitor the audio being recorded onto the clip store by monitoring the embedded audio on an SDI program output on the iBoB or Slate card.

Input Audio Setting on iBoB with Slate 2100

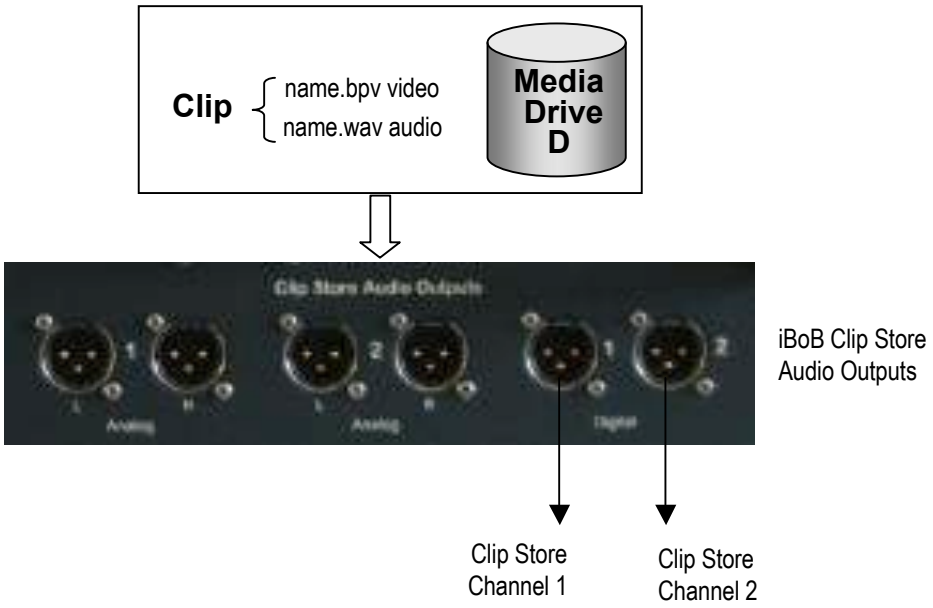
When recording audio on a Slate 2100, you need to specify where the audio is coming in from. Either Embedded on a SDI input, Analog or Digital.
In BPswitcher go to **Setup, iBoB, iBoB Assignments** there you will be able to change the **Input Audio** from a drop down menu, as shown at the right. Select **Pass through**. Now, whatever audio is embedded in the SDI stream of the video being recorded will be captured.



6.0.2 Audio Flow with Digital AES/EBU Audio

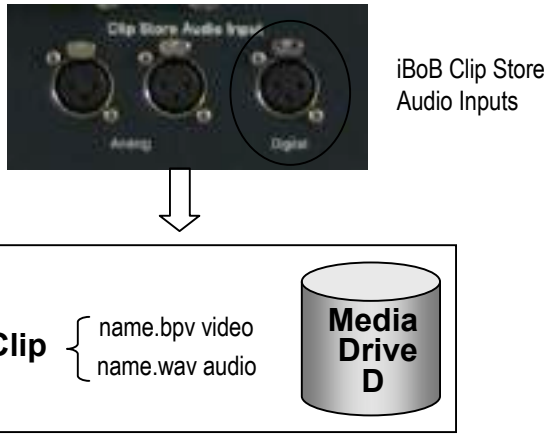
In addition to embedded audio, a Slate 2100 can also play and record Digital AES/EBU audio, on a Slate 100 and 1000 you need to go through a 3rd party audio de-embedder for digital audio. Digital audio is connected via the XLR connectors on the iBoB, labeled 'Digital', at a line level.

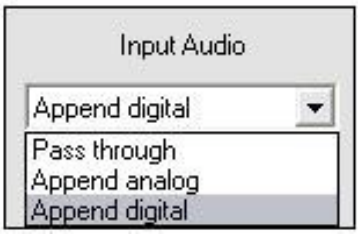
Playing Digital AES/EBU Audio



Recording Digital AES/EBU Audio

When recording audio on a Slate 2100, you need to specify where the audio is coming in from. Either Embedded on a SDI input, Analog or Digital.
In BPswitcher go to **Setup, iBoB, iBoB Assignments** there you will be able to change the **Input Audio** from a drop down menu, as shown below. Select **Append digital**. Now, whatever audio is connected to the Clip Store Digital Input on the iBoB will be recorded. All audio inputs require balance audio and the AES/EBU input must also be genlocked.

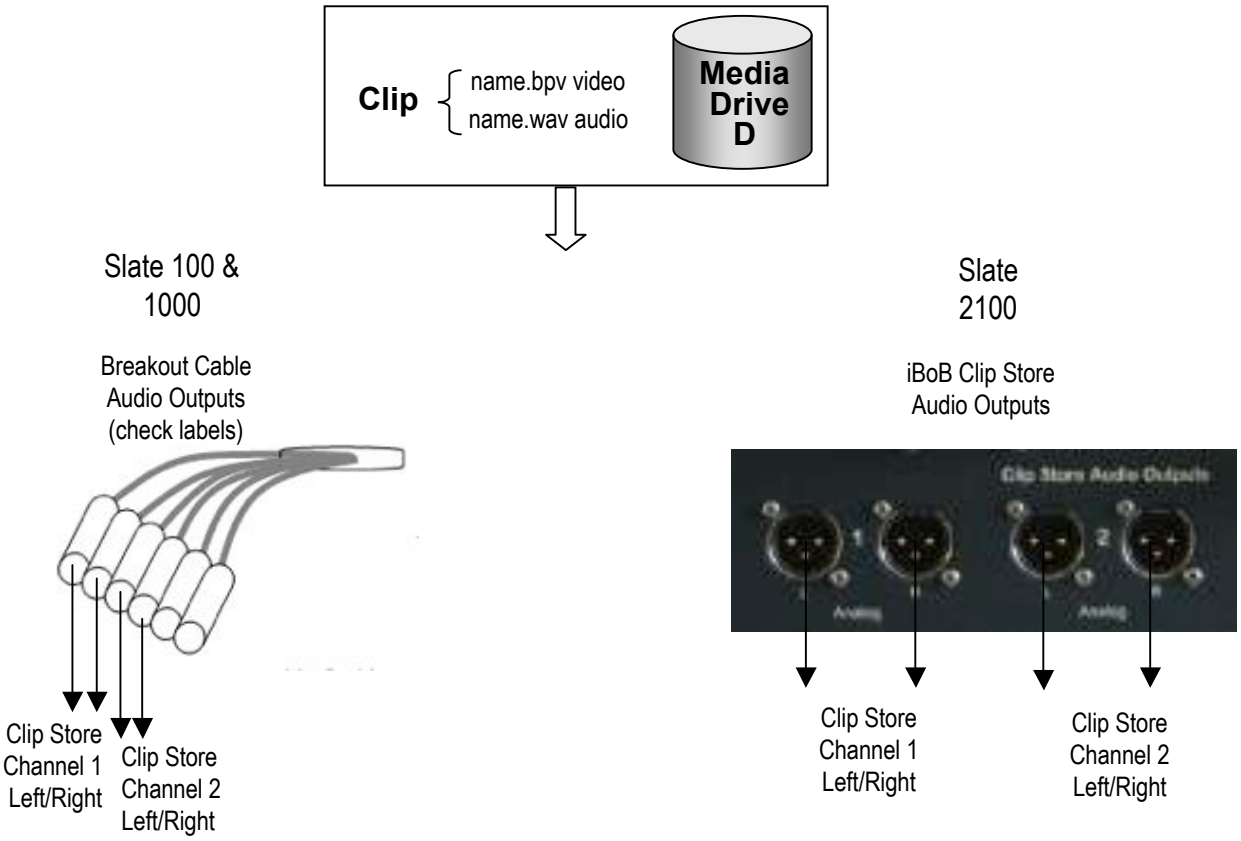




6.0.3 Audio Flow with Analog Stereo Audio

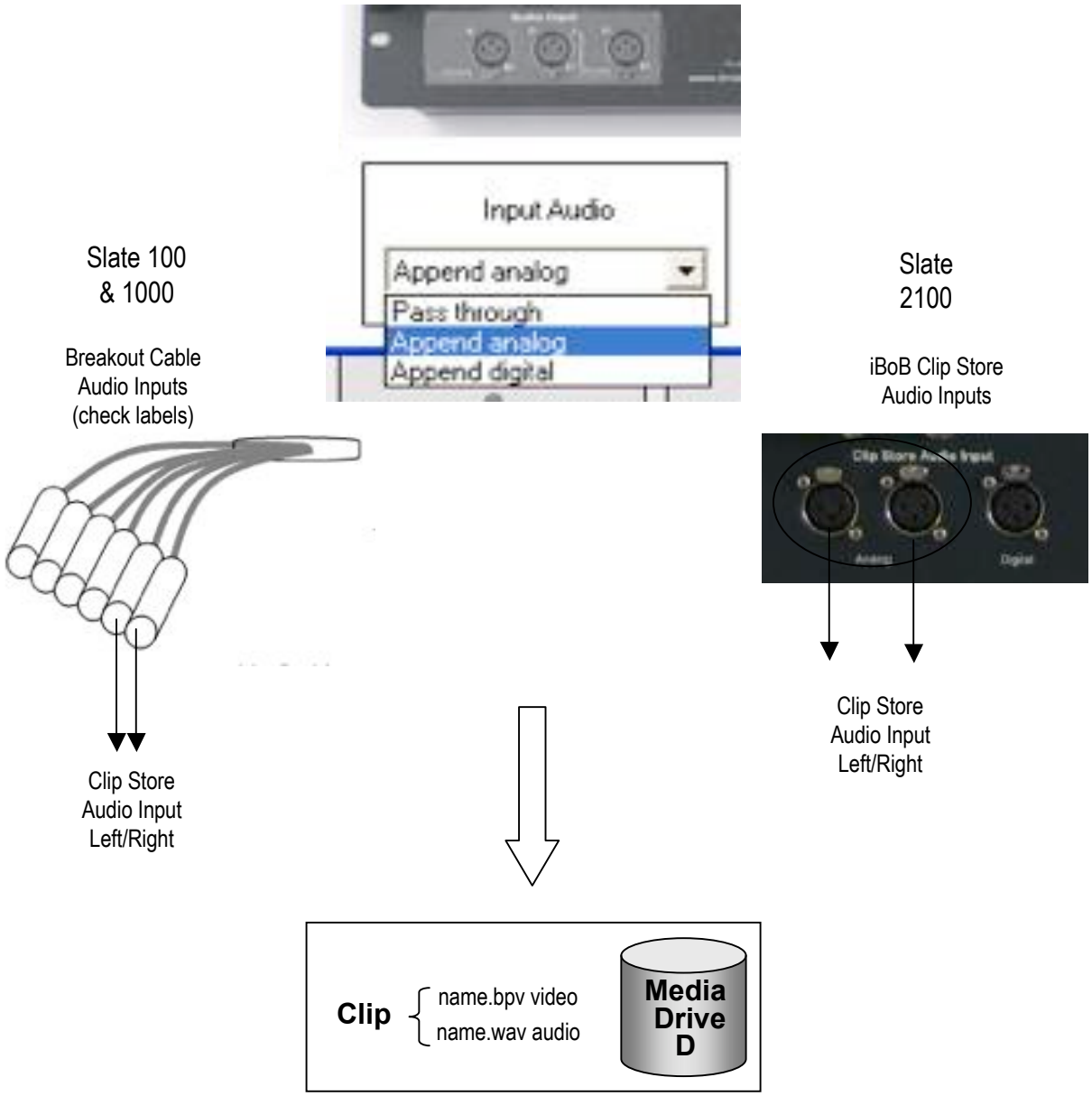
Lastly, the Slate 100, 1000 and 2100 can all play and record Analog Stereo audio. On a Slate 100 and 1000 you need to connect your audio source with the provided break-out-cable, which plugs into the back of the workstation, see section 1.2.7 for more information. On a Slate 2100 analog audio is connected via the XLR connectors on the iBoB, labeled ‘Analog 1’ and ‘Analog 2’, at a balanced line level.

Playing Analog Stereo Audio



Recording Analog Stereo Audio

When recording analog audio on a Slate 100 or 1000 you need to disable the embedded audio function. In BPswitcher go to **Setup, Engineering Settings** and deselect Embedded Audio, for more information see section 1.2.7.
When recording analog audio on a Slate 2100, you need to specify where the audio is coming in from. Either Embedded on a SDI input, Analog or Digital.
In BPswitcher go to **Setup, iBoB, iBoB Assignments** there you will be able to change the **Input Audio** from a drop down menu, as shown below. Select **Append analog**. Now, whatever audio is connected to the Clip Store Analog Input on the iBoB will be recorded. All audio inputs require balanced audio and the analog stereo input can handle both genlocked and un-timed sources.



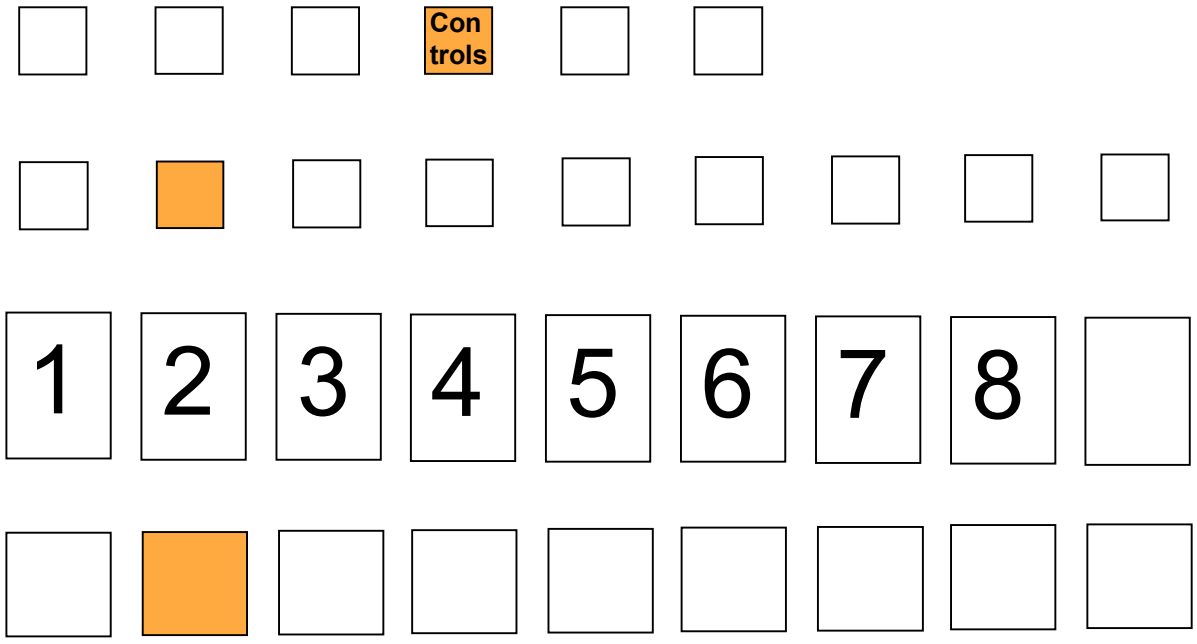
6.1 Recording a Clip

To record a clip onto the Broadcast Pix Clip Store:

1. If the Multi-View is open, quit the Broadcast Pix Switcher application by going to **File, Quit.**

2. If you have a Slate 2100*
   In **fail-safe** mode press the **[controls]** button (on older panels this is the **[capture]** button), and then the **[source]** button for the device you wish to record from, and both buttons will illuminate as illustrated below. The preview monitor will show the video of the source selected for recording. Make sure the serial fail-safe cable is connected to ensure proper selection.

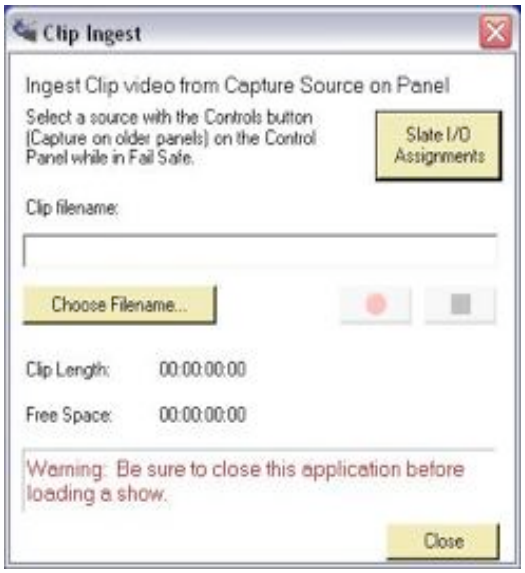
   The source numbers shown correspond to the 8 video inputs on the Break-out-Box (iBoB). Select the input source by number for the video tape recorder, server, camera, router, DVD or other live video input you would like to ingest.



*If you have a Slate 100 or 1000, you can select which input you wish to record from in the top right corner of the Clip Ingest window, as shown on the next page.

CAUTION: Before you click on to Clip Ingest icon below, you need to have video present. Step 1 above will insure this video is present, as long as you can see it on an external preview monitor. The video can be moving or paused.

2. Double-click on the **Clip Ingest** icon on the desktop and the Clip Ingest Window will appear, as shown below.



Slate 2100

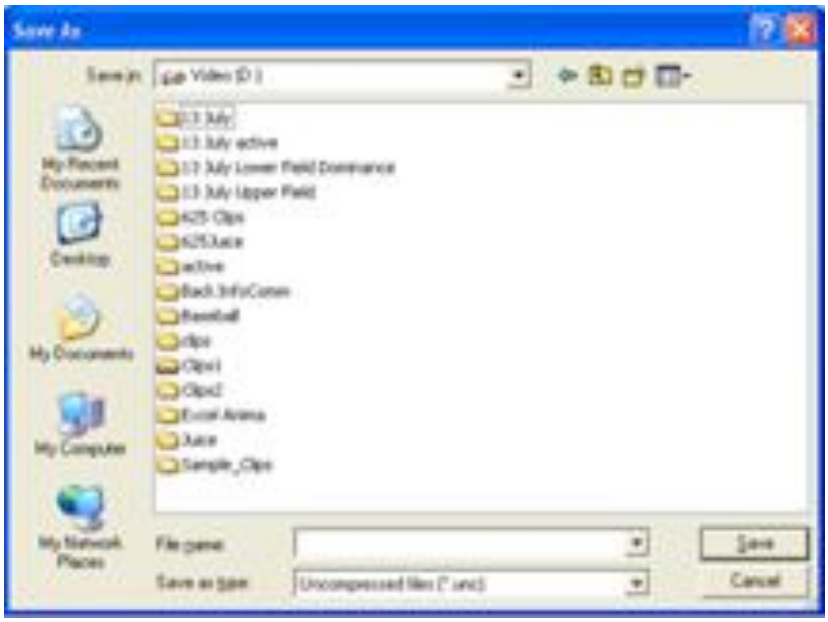
Slate 100/1000

3. Audio Monitoring, if desired, on Slate 2100

The audio that is to be recorded can be monitored from any of the analog or digital XLR audio outputs, on the iBoB. Press the **[Audio E-to-E OnOff]** PixButton in the lower right corner of the control panel and it will illuminate red, and you can monitor the audio as it exits the End-to-End capture path, whether or not you have started to record. You can only hear the audio if the above Capture video window is open. If you do not hear audio, then make sure the wiring is correct.
(Red is the only mode to monitor embedded audio)

NOTE: if you wish to monitor the Audio input when the capture window is closed, in fail-safe mode, press the [Audio E-to-E OnOff] PixButton again and it will illuminate Green, and the audio outputs will continue provide monitoring of whatever is going into the XLR input.

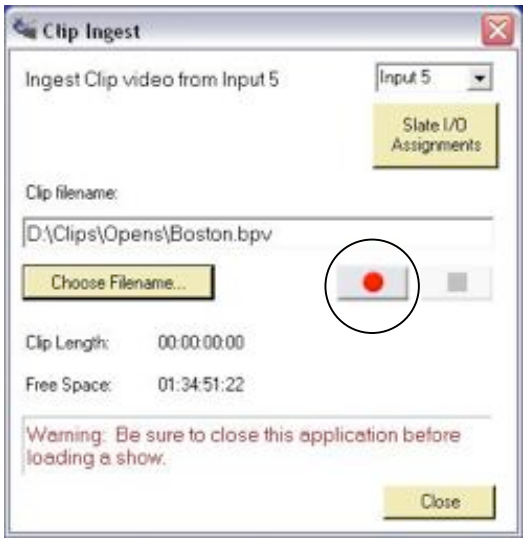
4. Click on **Choose Destination** and it will bring up the D:\clips folder where clips are stored. Enter the **name** you wish to give the clip, as shown below, and click on **Save.**

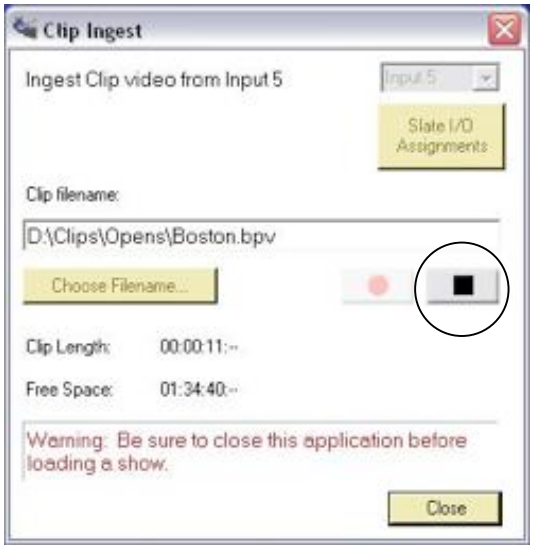


5. When you're ready to record, press the **Red Circle (Record)** button to begin recording, as shown on the left. The window will display how much free disk space is left and how long you've been recording that one clip.

6. When you're ready to stop recording, press the **Black Square (Stop)** button to stop recording, as shown on the right.

7. When you've completed all your ingesting, be sure to close the Clip Ingest window prior to starting Broadcast Pix Switcher by pressing the **Close** button





6.1.1 Creating Clip Thumbnails

Each clip can have its own thumbnail, which can be viewed on the Multi-View PixPad. By default the first frame of video automatically becomes the clip's thumbnail. It may be desired to change the clip's thumbnail, for instance if the first frame of video is black. Once a thumbnail is selected it will be remembered for all shows.

To create a clip thumbnail:

1. Click on the **Capture** menu in BPswitcher, then click on **Clip Thumbnail** (for Channel 1 or 2) on the drop-down menu, and the **Capture clip thumbnail** window will appear, as shown below.

2. Start the clip playing as described in section 6.3.
3. Pause the clip when you have reached the desired image you wish to capture by pressing the **[>]** button again on the control panel.
4. Click on the **Capture** box on the **Capture clip thumbnail** window.

   The desired image will then be captured and appear on the Multi-View. The image will be saved in the same folder with the clip on the Workstation's D drive, and so if you use the same clip in another show, you will not have to again capture a thumbnail for it.

As an alternative, you may specify the frame number of the clip you wish to capture, as shown above.

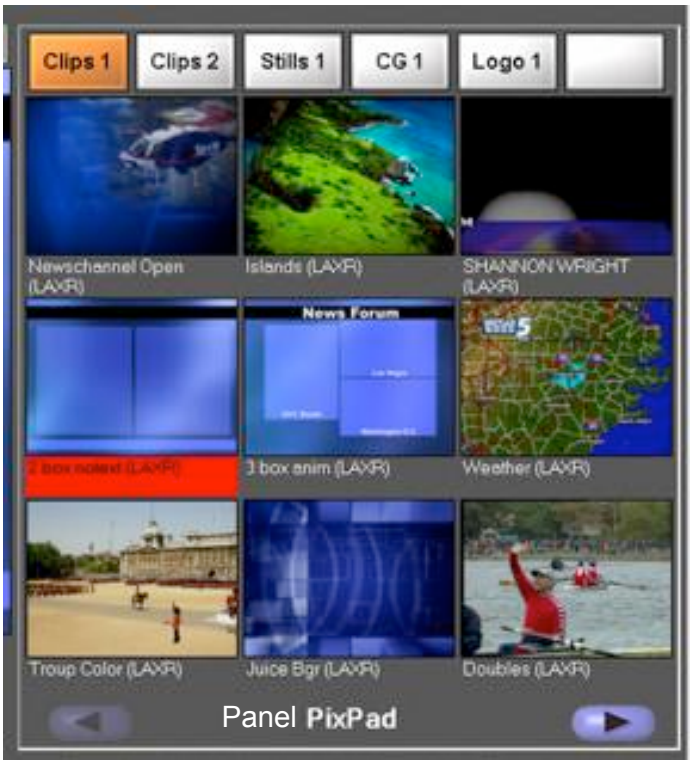
6.2 Clip Store Playout

Press the **[Clip]** device select button, and the following will occur:

1. The Clip button will illuminate
2. The name “Clip1” will appear in the top left corner of the display
3. The number and name of the currently selected clip will be in the display
4. The PixPad will change to clips, including the first nine clips, which correspond to the nine shown in the clip library portion of the Multi-View
5. The knobs will have their clip data shown in their portion of the display.

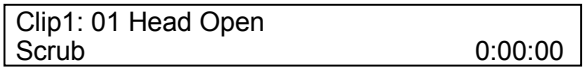
Clip1 Device Controls

Panel PixPad
on the Multi-View



PixPad
on the Control Panel

Display



Knobs Motion Controls

6.3 To Select a Clip by Name

1. Press the **[Clip]** Button if it is not already illuminated

2. Select the desired clip by name by pressing its PixButton. In the example above, to select the "2 Box notext" clip, press the **[Clip 1 2 Box notext]** PixButton, and it will illuminate. The selected clip will appear on the Multi-View as well as in the Panel PixPad where it will change from grey to orange (red if the Clip Store is on air) and its name will appear in the display and in the Clip PixButton in the program row.

3. Push the **[>]** motion button, it will turn orange, the clip will start to play and its timecode will be in the the display as well as the Multi-View.

6.3.1 To Select a Clip by Number

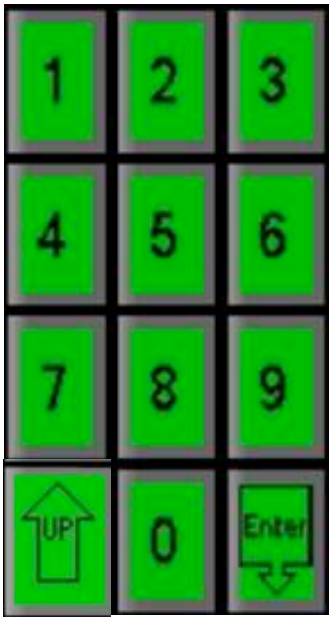
1. Press the **[Clip]** Button if it is not already illuminated

2. On the Clip Store PixPad, press the **[Controls]** PixButton, which will bring up the clip controls PixPad, then press the **[Numeric Keypad]** PixButton, and it will bring up the numeric keypad PixPad, as shown below:

3. Enter the clip **[Number]** you wish using the numeric keypad. As you enter each number it will appear in the display.

4. Press the **[Enter]** PixButton and the selected clip will appear on the Multi-View, its name will appear in the display, and its time code will be shown. The PixPad will change to the Library containing the selected clip, which will be illuminated.

5. Push the **[>]** motion button, and it will turn orange and the clip will start to play, and its timecode will advance.



NOTE: To select a clip by number, the clip file name must have digits in front of the name, i.e. "02_Open".

6.3.2 Selecting a Clip with the Multi-View

It may be desired in some situations to select library elements with the mouse, rather then using panel buttons.

To Select a Clip with the mouse, simply Click-on its **Thumbnail** in the Panel PixPad on the Multi-View.

To select a clip not currently shown on the Multi-View, use the navigation buttons at the bottom of the PixPad, the left and right arrows.

6.3.3 Viewing More Clips in the Library

The clip PixPad displays the first 9 clips. To view additional clips, either:

1. Press the **[Next]** PixButton**,** and the next 9 will appear, as shown.

2. Press the **[Back]** PixButton, to go back to the previous page.

NOTE: You can always return to the first page of clips, by pressing the [Clips] PixButton again.

6.3.4 Compressed Clips

The internal clip store of the Broadcast Pix can support playback of compressed clips, either QuickTime movies or MPEG movies. This is ideal if you are exporting video files from a non-linear editing system like Avid or Final Cut Pro or even an animated background from Adobe After Effects or Apple Motion.

To play compressed clips, appropriate codecs need to be installed on the workstation. These are either installed at the factory on new systems, or are installed through an update for existing customers. For assistance please contact technical support.

To play compressed clips:

1. Export your files out of your 3rd party software with these settings:

   - File Size: 720x486/NTSC or 720x576/PAL (either anamorphic 16:9 or 4:3)
   - Frame Rate: 29.97/NTSC or 25/PAL
   - Field Order/Dominance: Bottom first
   - Scan Mode: Interlaced

   For QuickTime movies:
   - Video Compression Settings: DV/DVCPro 25 Mbps or 50 Mbps
   - Quality: Best
   - Audio Settings: Stereo PCM Data, 16 bit, 48kHz
   - File Extension: .mov or .avi

   For MPEG movies:
   - Video Compression Settings: MPEG-1 or MPEG-2 (ISO/IEC 13818-7) video
   - Quality/Bit Rate: up to 15 Mbps
   - Audio Compression: MPEG-1 Layer I, II, or III or MPEG-2
   - Audio Settings: Stereo PCM Data, 16 bit, 48kHz
   - File Extension: .mpg

2. Copy the movie file to the D:\clips directory of the Broadcast Pix workstation.

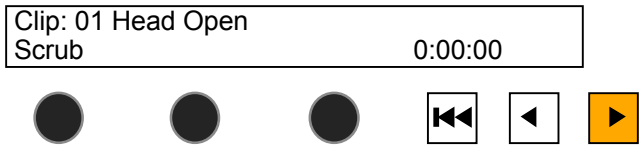
3. Add the file to your show using PixMaster as described in section 3.

4. Play/control your clip as described in this section.

NOTE: For specific compression/codec support, please contact customer support.

6.4 Clip Motion Controls

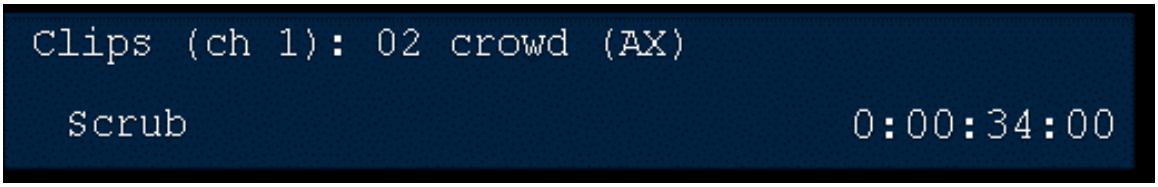
The motion controls provide a range of control over a selected clip.



1. To play a clip press **[>]**, and it will illuminate orange
2. To pause a clip that is playing, press the **[>]** button again.
3. When a clip is paused, pressing the **[>]** button will start it playing again.
4. To return to the beginning of the clip press the **[I<<]** button.

6.4.1 Clip Counter

The runtime of the clip is displayed in lower right corner of the display either on the Control Panel or SoftPanel.
When a clip is playing the timecode shows hours, minutes and seconds.
When the clip is stopped, the time code also displays the frame, as shown below.



Hours : Minutes : Seconds : Frames

The clip's runtime is also shown on the Multi-View, and clips can be set to count up or count down, see section 2.5.5

6.5 Clip Control Modifiers

Each individual clip can have its own set of modifiers, even if the same clip is in both channels of the Clip Store, you may have different modifiers in each channel. Modifiers include: Mark In, Mark Out, Aspect Controls, Remove Mark In, Remove Mark Out, Loop Clip, Auto Start, Auto Stop and Auto Rewind. When a clip is ingested and added to a show the clip is set up by default to Loop, Auto Start, Auto Stop and Auto Rewind (LAXR).

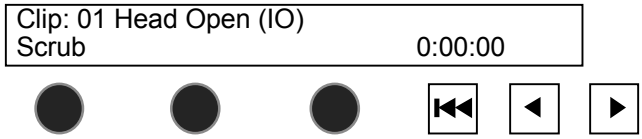
6.5.1 Mark In and Out Points

Mark-in and Mark-out enable points to be set at the beginning and end of a segment of a clip. Once set, the [I<<] button will bring the clip to its mark-in point, and the clip will stop playing at its mark-out point. These are helpful for temporarily trimming off unused portions of a clip when ingested.

To set mark points on a clip:

1. Select the **[Clips 1]** or **[Clips 2]** button, in the Device Select section of the control panel or SoftPanel.
2. On any clip PixPad, press the **[Controls]** PixButton, which will bring up the clip controls PixPad, as illustrated below:
3. If the Clip Store is not on preview, then put it there by pressing the Clip Store button on the **preview** row. Or you may use the source monitors in the Multi-View.
4. Press the **[>]** motion button to start the clip playing.
5. Press the **[Mark In/Out]** PixButton, and a new PixPad will appear.
6. When the clip reaches the point you wish for a mark-in point, press the **[Mark-In]** PixButton.
7. When the clip reaches the point you wish for a mark-out point, press the **[Mark-Out]** PixButton.

To let you know that Mark-In and Mark-Out points have be set for a clip, the letters "I" and/or "O" respectively are appended to the clip name in the display as illustrated below:



To Remove Mark Points:

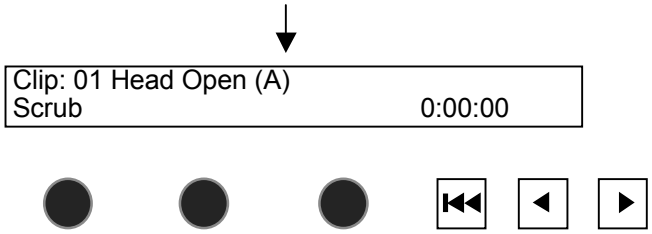
After setting the Mark-In and Mark-Out points as described in the preceding section, you wish to remove one or both of them, press the **[Rem Mark In]** and/or **[Rem Mark-Out]** PixButtons. When pressed, the respective letters "I" and/or "O" that had been appended to the clip name in the display will disappear to let you know that the mark points are gone. When setting new in and out points, you first need to remove each point, before selecting a new ones.

6.5.2 Auto Start

When clips are selected from the Clip Store, they must be manually started with the [>] motion button. Instead, the auto-start function may be set to automatically begin playing from its Mark-In point (or from the beginning if no mark in point is set) when taken to air, by pressing [Cut] , [Auto Trans] or using the [Fader].

To turn on Auto Start:

1. Select the desired clip, and press the **[Controls]** button on any Clip PixPad.
2. Press the **[Auto Start On-Off]** PixButton and the letter "A" will be appended to the clip name in the display to let you know that the Auto-Start function has been turned on for that clip. (If other modifiers are turned on they will also appear)



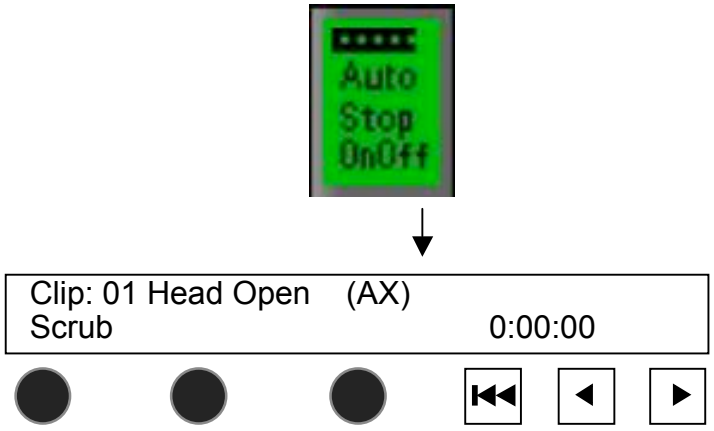
6.5.3 Auto Stop Clips

Just like it is possible to have a clip start on transition to program with Auto Start, a clip can also be set to automatically stop when it transitions off program by pressing [Cut] , [Auto Trans] or using the [Fader].

To turn on Auto Stop:

1. Select the desired clip, and press the **[Controls]** button on any Clip PixPad.

2. Press the **[Auto-Stop On-Off]** PixButton and the letter “X” will be appended to the clip name in the display to let you know that the Auto-Stop function has been turned on for that clip.



6.5.4 Auto Rewind Clips

A clip can also be set to automatically rewind to the beginning or the set in point of the clip. This is useful when you are using a clip multiple times, and want the clip to always start from that point.

To turn on Auto Rewind:

1. Select the desired clip, and press the **[Controls]** button on any Clip PixPad.

2. Press the **[Auto-Rewind]** PixButton and the letter “R” will be appended to the clip name in the display to let you know that the Auto-Rewind function has been turned on for that clip.

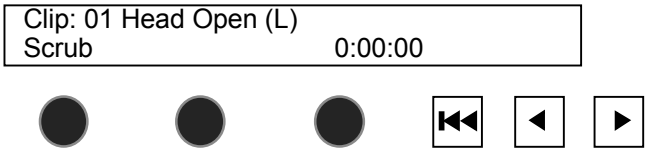
NOTE: If a clip has audio associated with it, the audio will cut off ounce the clip is taken off of program, if it is desired to be able to keep playing the audio once transitioned off, deselect Auto-Stop.

6.5.5 Loop Clips

When a clip reaches its end, it stops. If instead you wish to have the clip return to the beginning and start paying again, then you can turn on the loop function, which will cause the clip to continuously loop. If you have mark points in place, then the clip will loop between the Mark-points. This is ideal when creating animated backgrounds, instead of creating a long animation (which takes up hard drive space), create a shorter one and have it loop.

To set a clip to loop:

1. Select the desired clip, and press the **[Controls]** button on any Clip PixPad.
2. Press the **[Loop On Off]** PixButton, and the letter "L" will be appended to the clip name in the large display to let you know that the Loop function has been turned on for that clip, as illustrated below (if mark-in and out points are also set, then "LIO" will appear).



6.5.6 AutoAspect Controls

The clip store, as well all other graphic devices, have the ability to natively change the aspect ratio of content, on the fly with no delay or morphing.
This is ideal when mixing 16:9 content in a 4:3 show, or vice-versa. Each piece of content in a channel can have its own aspect controls for greater flexibility.

To change a clip's aspect:

1. Select the desired clip, and press the **[Controls]** button on any Clip PixPad.
2. Press the **[Aspect Ctrls]** PixButton, the the PixPad will change, as shown on the right.
3. Select the native aspect ratio of the clip, either **Native 4:3** or **Native 16:9**.
4. Now select the desired treatment to be applied to the clip. Either **None, Box, 14:9** or **Crop.**

For more information on AutoAspect, see section 1.2.9.

6.5.7 Scrubbing a Clip

Scrubbing a clip is causing the clip to fast forward very quickly, which is a quick way to preview a clip, and a handy way to move to a desired portion of a clip. It is also helpful when marking and in and out points.

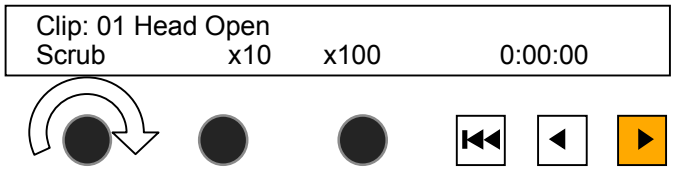
To scrub a clip:

1. If the **[Clip]** button is not illuminated, assign the device controls to clips by pressing the **[Clip]** button, and it will illuminate.

2. Put the desired clip on preview by pressing the Clip Store button in the **Preview** row or can monitor on the clip by using the Multi-View.

3. Turn the **[Left Knob]** and it will scrub the selected clip. You may stop anywhere and the clip will be paused in that location. A clip must be paused in order to scrub through it.

4. To scrub faster through a clip use the **x10** or **x100** knobs to quickly advance through the clip.



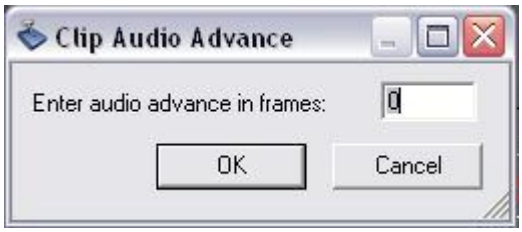
6.6 Setting the Clip Audio Advance

The audio output of the Clip Store may be advanced so that it is at the same time as the microphones and other audio sources that are sent to an audio mixer. Then it can enter the audio mixer with the microphones and be mixed together, and then outputted from the mixer and delayed a few lines to then be in time with the video leaving the Broadcast Pix system.

To advance the audio:

1. In BPswitcher, make sure a show is not running. Click on **Setup**, and the following drop-down menu will appear:

2. Click on **Clip Audio Advance** and the following window will appear.



3. Enter the **number** of frame desired to advance the audio and press **OK.**

   The system will advance the audio by the number of frames indicated until it is changed again in this manner.

6.7 Optional Dual Clip Store (Dual DDR)

A second channel of clip store can be installed as an option, and is included on the Slate 2100. It includes a second media hard drive that is striped to the first hard drive. This creates a higher performance media drive that has about twice the capacity of the standard system.

When the second channel of clip store is installed, two clip stores may be defined in a show, just like a second channel of still store can be defined on any system. The second channel of clip store will be accessible from one of the three assignable wildcard device selection buttons in the upper right hand corner of the panel. The PixButtons for the second channel will have a 2 on them to indicate 2nd channel.

Clips are recorded onto the second Clip Store channel as they are for the first, except that there is a separate thumbnail capture command for the second channel of clip store.

NOTE: Even though you may have one clip in both channels of the clip store, any control changes (Mark In/Out, Loop, etc) made on one channel with automatically occur on the other clip channel.

6.8 Optional Remote Control of an External DDR

Optional control of a remote DDR may be added to the system, to enable the control panel to control up to three channels of an external DDR, by using the Louth VDCP protocol. The option includes software and an Edge Port RS-422 hub. It has been thoroughly tested with an ImageServer from 360 Systems, and may also work with other servers that support the VDCP protocol.

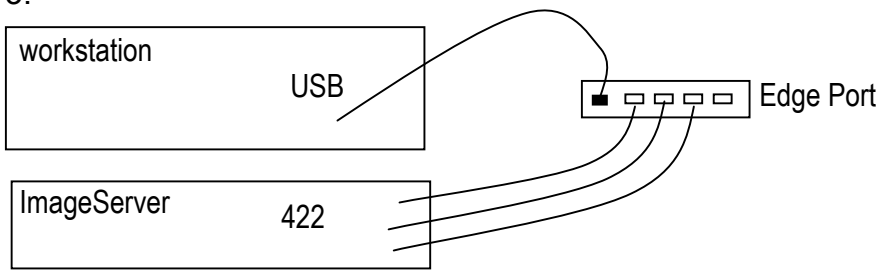
6.8.1 Installing the External DDR Control Option

1. If the option was ordered as part of the system, then the software in already installed. Otherwise install the External DDR software from the disk included.

2. Make up RS-422 cables for each of up to the three channels. These cables require the following wiring:

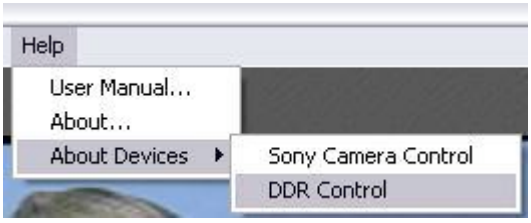
	Male DB-9 360 ImageServer	Female DB-9 Edge Port 4iRS-422
1	GND	
2	Transmit A (TX-)	8
3	Receive B (RX+)	7
4	GND	
5	N/C	
6	GND	
7	Transmit B (TX+)	4
8	Receive A (RX-)	3
9	GND	5

3. Attach the included Edge Port 422 Hub to a USB port on the Broadcast Pix workstation. Then attach the 422 cables from the Break-out-box to each channel of the DDR that you wish to control, as shown below, ensuring that you align Channel 1 with Port 1, Channel 2 with Port 2 and Channel 3 with Port 3.



6.8.2 Verifying Installation of External DDR Software

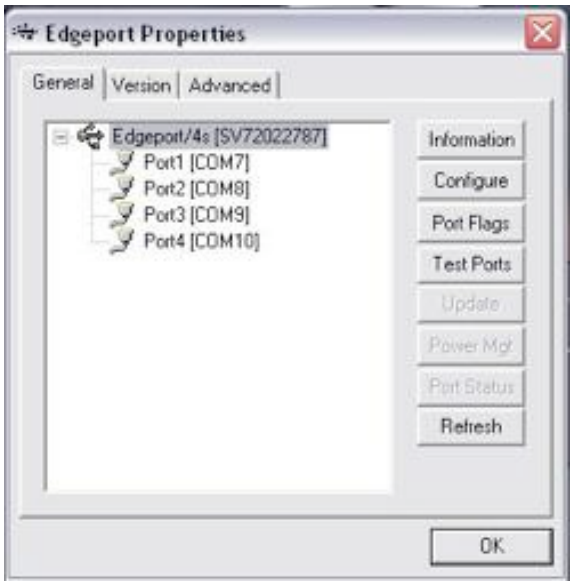
On the Broadcast Pix Switcher window, select the **Help** menu, then **About Devices**, then **DDR Control** as shown below….



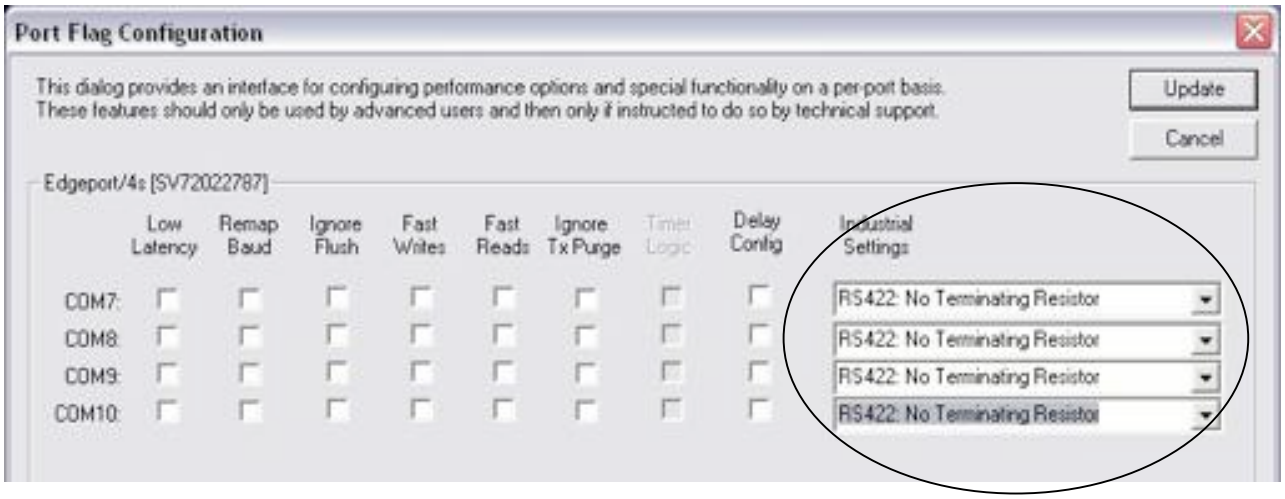
… and the following window will appear if the external DDR option is present:

It may also be necessary to ensure that the Edge Port RS-422 hub is installed/configured properly. To verify you must use the **Edgeport Configuration Utility,** which was installed on your workstation at the factory.

To access the utility go to the **Start Menu** in Windows XP, select **All Programs,** followed by **Digi USB**, then **Edgeport Configuration Utility.** This will bring up the window below. If this utility is not installed on your workstation, it may be necessary to install the driver CD which came with your Edge Port, contact technical support for more information.



The Edge Port communicates to your server via a RS-422 connection, to ensure that the Edge Port is configured to do so select the **Port Flags** button, in the Edgeport Properties window, which will bring up the Port Flag Configuration window below.



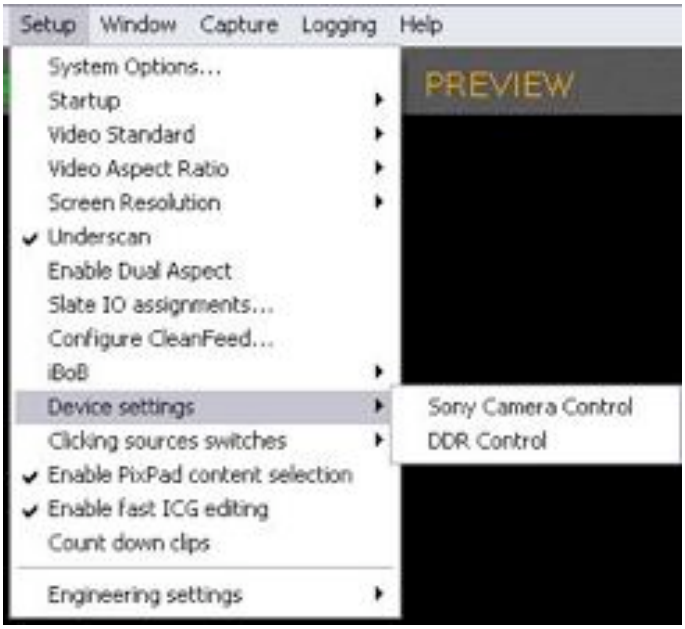
Under **Industrial Settings,** ensure that each COM port is set to **RS422: Non Terminating Resistor.**

Select the **Update** button to save changes, then close the Edgeport Properties window.

6.8.3 Selecting Clips to Access from Broadcast Pix

You can select all or just a subset of clips on the DDR, to make the collection of clips that you want to have access to from the Broadcast Pix panel.

1. In BPswitcher, select the **Setup** menu, **Device Settings** and then the **DDR Control** menu, as shown below…..



…and the following DDR settings window will appear.
(To see which COM ports are being used, go into the Workstation's Device Manager, under Ports COM & LPT).

2. Click on **Select Clips** and the Select DDR Clips Window will appear as shown on the next page.

3. Select the clips you wish to access from the panel by clicking on **each clip** individually, and each it will illuminate, as shown.

   To deselect a clip, click on it again and it will revert to white.

   The clips that are selected in this window will appear in all 3 channels of the DDR.

4. Click on **OK** on the Select DDR Clips window.

5. Then click on **OK** on the DDR settings window, to save your clip settings.

NOTE: When naming your clips on an external server, it is important not to have a name longer than 8 characters long. The VDCP protocol only supports file names with 8 or less characters.

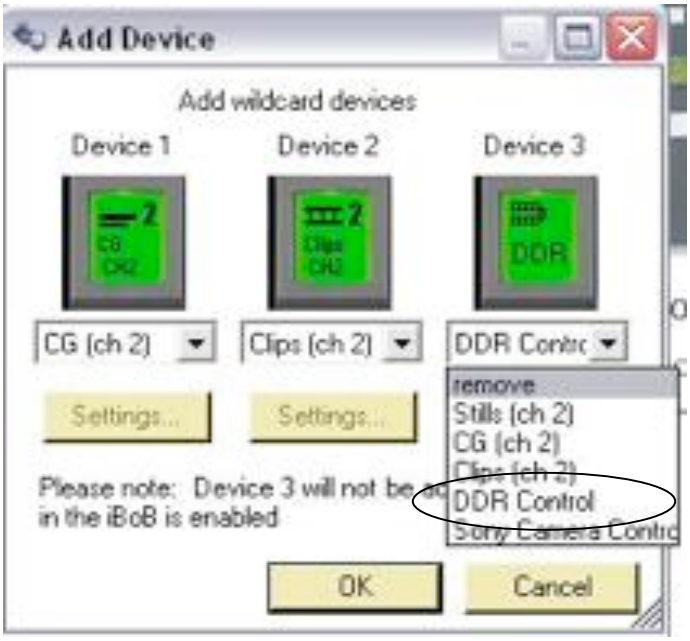
6.8.4 Adding DDR Control to a Show

The use of the external DDR is similar to the use of the internal DDR, as the device must be designated in the show definition as being included in a show, and then the device controls are used to control it.

1. Select the show to which you wish to add external DDR control by loading a show (or creating a new one) and then opening the **PixMaster Show Editor**.

2. Select Show Settings and and then More Devices to open the Add Devices window.

3. Then select **DDR Control** from the drop down window, as shown below.



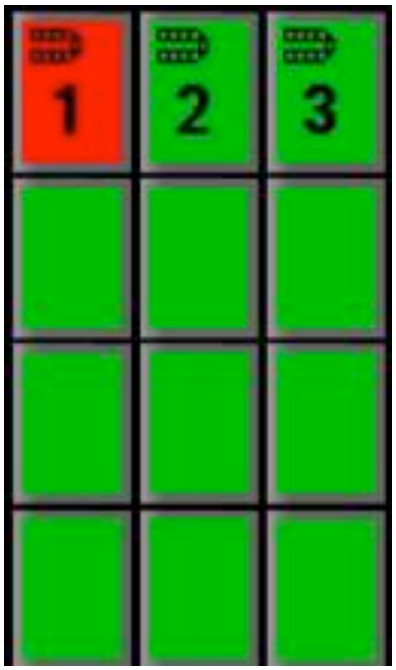
4. Click on **OK** and then **Save Show.**

6.8.5 Controlling External DDR

When a show contains the External DDR, one of the three wildcard device PixButtons in the upper right corner of the panel will show the DDR as illustrated below.

To Control the External DDR:

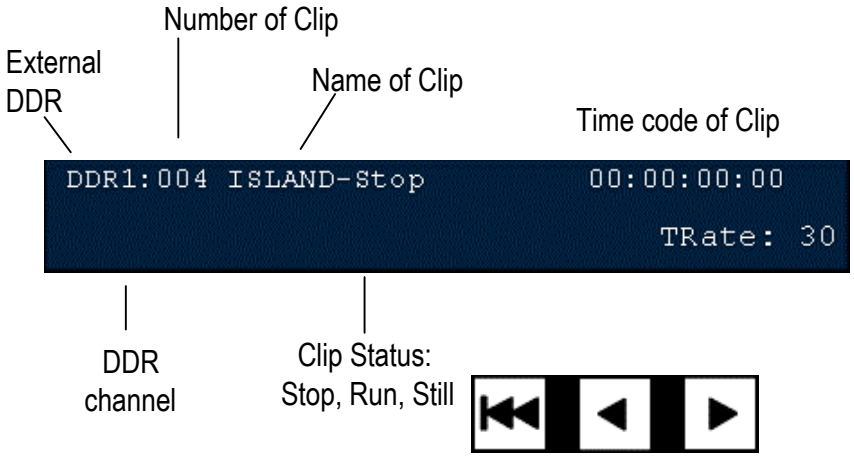
1. Press the above **[External DDR device selection] PixButton** and it will illuminate orange, and the device controls will show the up to three channels to select from, as illustrated below. The large display will also say External DDR in it's top left corner, to let you know the device controls are now assigned to this device.



2. To access the first channel of DDR, press the **[1]** PixButton, and it will illuminate red, and the PixPad will change to show the first 9 clips on this channel as shown below, including the name of each clip on the button.

   As with other devices you may select from additional clips by pressing the [Next] PixButton or by using the numeric keypad, see sections 6.3.1 and 6.3.3.

3. Select the desired clip and by pressing its **PixButton**, and the information for that clip will appear in the large display, as shown below.



4. Press the **[>]** Button and the clip will begin to play. The display will show both the status as Run, and the time code move, as shown below.

5. To Pause press the **[>]** button again (and then again to resume playing)

6. To back-up press the **[<]** button

7. To rewind press the **[I<<]** button

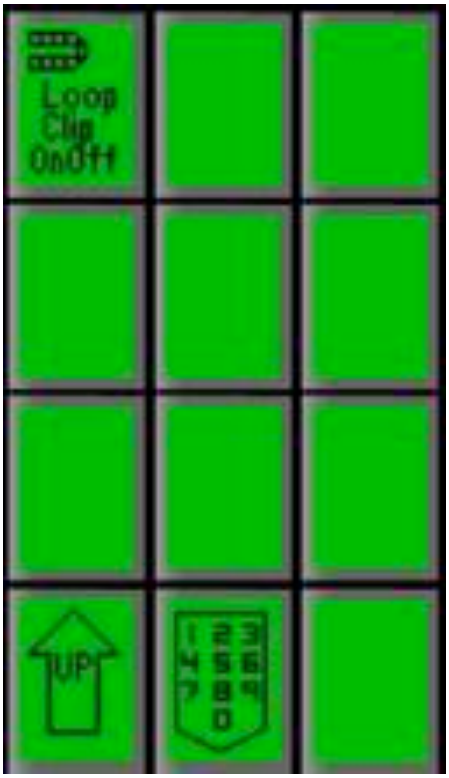
NOTE: When controlling an external DDR, it is important to select commands slowly. There is a slight pause from when you select a command to when that command is executed. Any fast button-pushes may break the communication to your external DDR.

6.8.6 Looping

An external clip may be set to loop continuously. To set a clip to loop:

1. Select a clip, as described in section 6.8.6 above

2. Press the **[Controls] PixButton** at the bottom of the PixPad, which will bring up the following PixPad.



3. Press the **[Loop Clip OnOff] PixButton**. The letter L will be appended to the clip name in the display to let you know that it has been set to loop, as shown below:

To turn off looping, press the above **[Loop Clip OnOff] PixButton** again, and the L will be removed from the display.

6.8.7 Accessing More Channels

Control of a second or third channel of the external DDR is done in the same manner as the for the first channel, as illustrated in section 6.8.6. To let you know which channel you are controlling, the number of the channel appears in the large display and in the upper right corner of every PixButton, as shown below for channel 2.

Error Message if you Have no Connection

If there is no wire connection between the 422 Break-out-box and a desired channel, then an error message will appear in the display, for example if you unplug the wire for the second channel, it will say:

Section 7:
Optional Device Controls

The Broadcast Pix system may control a number of external devices, one of which is DDR control which was described in the previous section. As an option the switcher can also control robotic cameras and external audio mixers, for a true one-man production.

7.1 Camera Control Option

At this time, Broadcast Pix offers software for two pan/tilt systems: Sony (through VISCA Control) and the Hitachi (through Eagle Pan/Tilt Control). This enables control of the camera position, including tilt, pan, zoom, focus, iris, speed control, preset positions and most controllable CCU controls. Even though the basic operation for Sony and Hitachi cameras are similar, there are some minor differences between the two, as is indicated in the following sections.

7.1.1 Camera Control Licensing

To see if your Broadcast Pix system has been licensed for camera control, in the BPswitcher application click on the **Help** menu, **About Devices** and then **Camera Control**, as shown below.

A window will appear which will indicate the version of your plug-in license, as shown below for Hitachi Camera Control.

7.2 Installation of Sony Cameras

Sony VISCA controlled cameras can either be connected using a RS-232 or RS-422 serial connection and are selectable on the bottom of each camera with dip-switches. With a RS-232 connection, the maximum cable length can be extended to 15 meters (50 feet), while the RS-422 connection extends this further to 1200meters (4000 feet). It is important to set the baud rate of each camera to 9600 bps, for both a RS-232 and a RS-422 connection, this is also selectable on the bottom of each camera with dip-switches.
The COM ports out of the Broadcast Pix workstation are RS-232 connections. Depending on which option is purchased, the correct adapter is supplied, either a RS-232 cable or a converter to RS-422 (B&B 422-PP9TB).
Sony PTZ cameras also support daisy chain as well as star configurations using a USB to Serial Edgeport. You may either loop cameras to each other in a 322 daisy chain, have all cameras connect to the workstation with several serial ports using a star configuration, or have a combination of both scenarios.

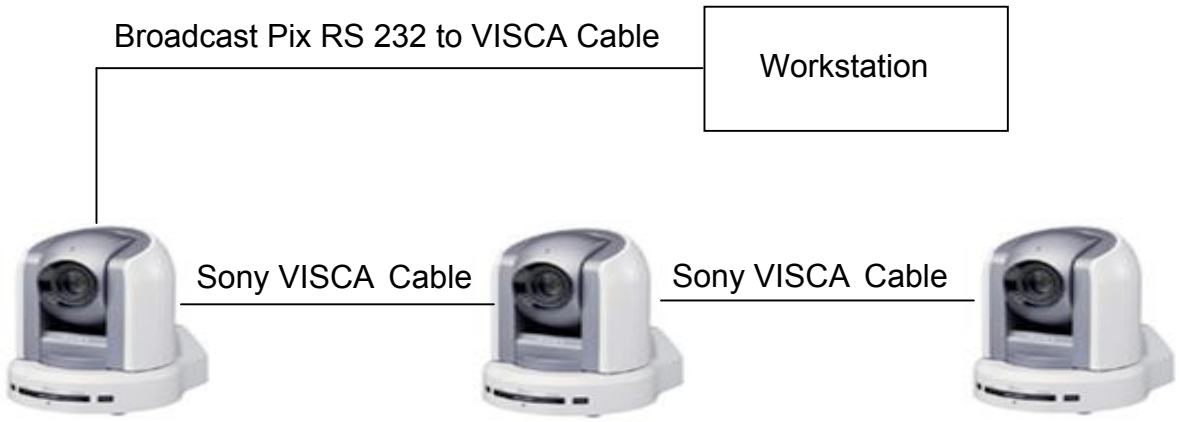
Below is the wiring diagram needed for serial cables connecting Sony Cameras to the RS-422 COM ports.

----------Computer----------		--------First Cameras--------	
B&B 422PP9TB	Edgeport DB-9	Sony BRC-300	Sony EVI-D70
TXD(A) -	3	7	3
TXD(B) +	7	6	4
RXD(A) -	8	9	1
RXD(B) +	4	8	2
GND	5	5	5

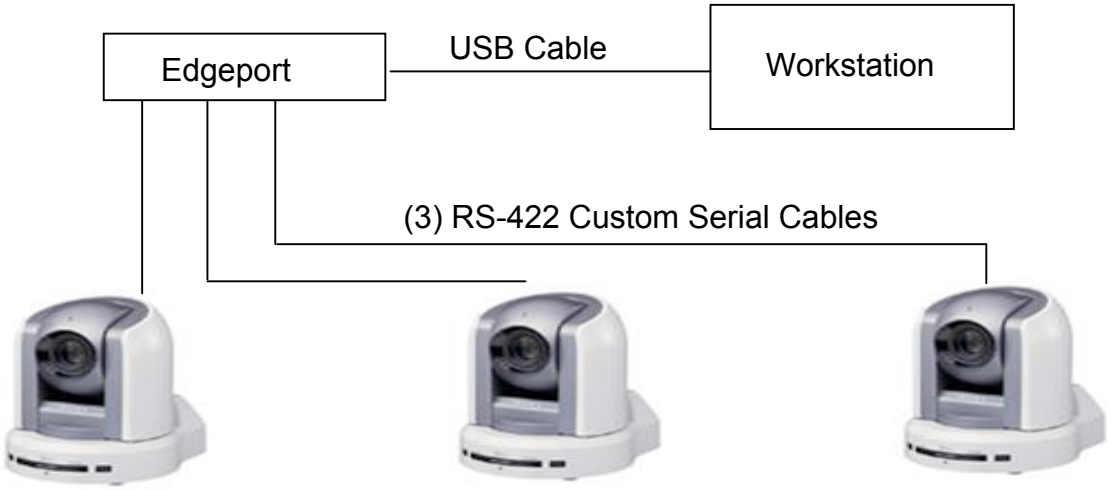
A star wiring configuration is when all camera control cables from each camera is connect to the workstation, through an Edgeport, instead of daisy chaining to each camera. In some installations this will reduce the amount of cable run.
Another option it to have one or several long runs to a set of cameras, then connecting each camera in a daisy chain configuration. In some installations this will reduce the amount of cable run. See diagrams on next page.

It is important to set each camera to its proper camera address/camera position. This is done directly on each camera and it is recommended to set each camera to ‘Auto’ or ‘0’, as the Broadcast Pix software with automatically detect the correct settings. On an EVI-70 there is no such setting, as it is internally set to ‘Auto’, on a BRC-300 the camera address is changed on the button of each camera via dip-switches.

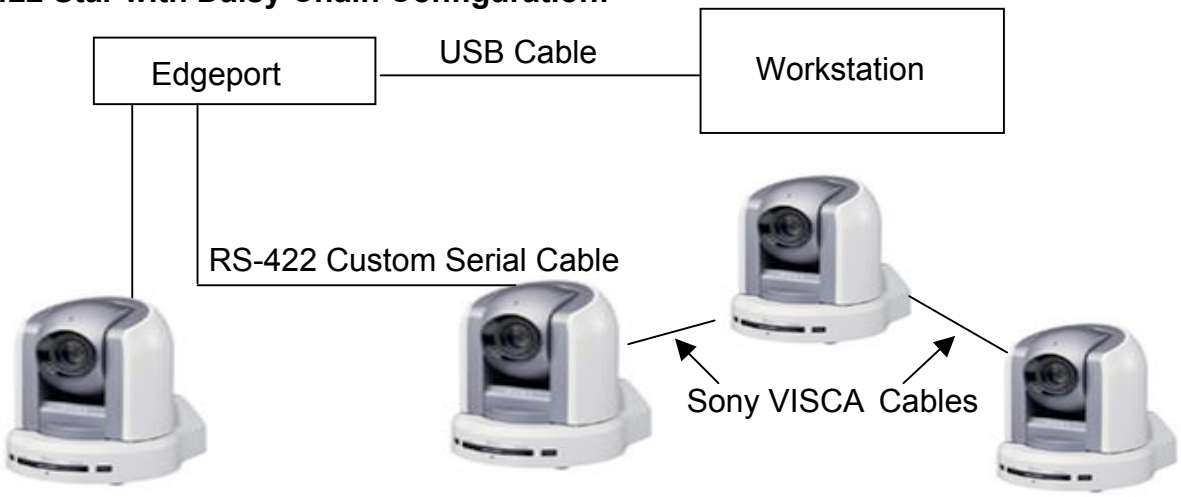
RS-232 Daisy Chain Set-Up:



RS-422 Star Configuration:



RS-422 Star with Daisy Chain Configuration:



7.3 Installation of Hitachi Cameras

Most of the instructions for how to install this camera control system come from Display Devices, the makers of the pan/tilt head that is being uses by Broadcast Pix. So refer to the Display Devices manual for most information. The following instructions provide an overview, and the Broadcast Pix specifics.

Contents of the Broadcast Pix Camera Control Option

Before you start, check that all of the components are present. They fall in two groups: those supplied by Broadcast Pix and parts from Display Devices and others that need to be acquired before installation.

Parts supplied by Broadcast Pix :

- Software Installation CD.
- Operations and Installation Manual
- RS-232 to RS-485 Adapter, two-wire.
- RS-422 and RS-485 Application Note (CD and print).

Parts Needed from Display Devices

- A Pan/Tilt head for each camera, either a PT-50, VT-50, PT-101 or VT-101
- Power supplies for the above heads
- If you are controlling more than one head, you need a splitter, such as a PT-T2 –Power and Control Tee from Display Devices.

You also need a camera for each head that is supported by these heads, including selected box cameras from Hitachi, Sony or Panasonic. And you need a serial cable to run to the Broadcast Pix adaptor, and 485 cables and video cables to run to the cameras. Refer to the *RS-422/RS-485 Application Note* for information on selecting cables.

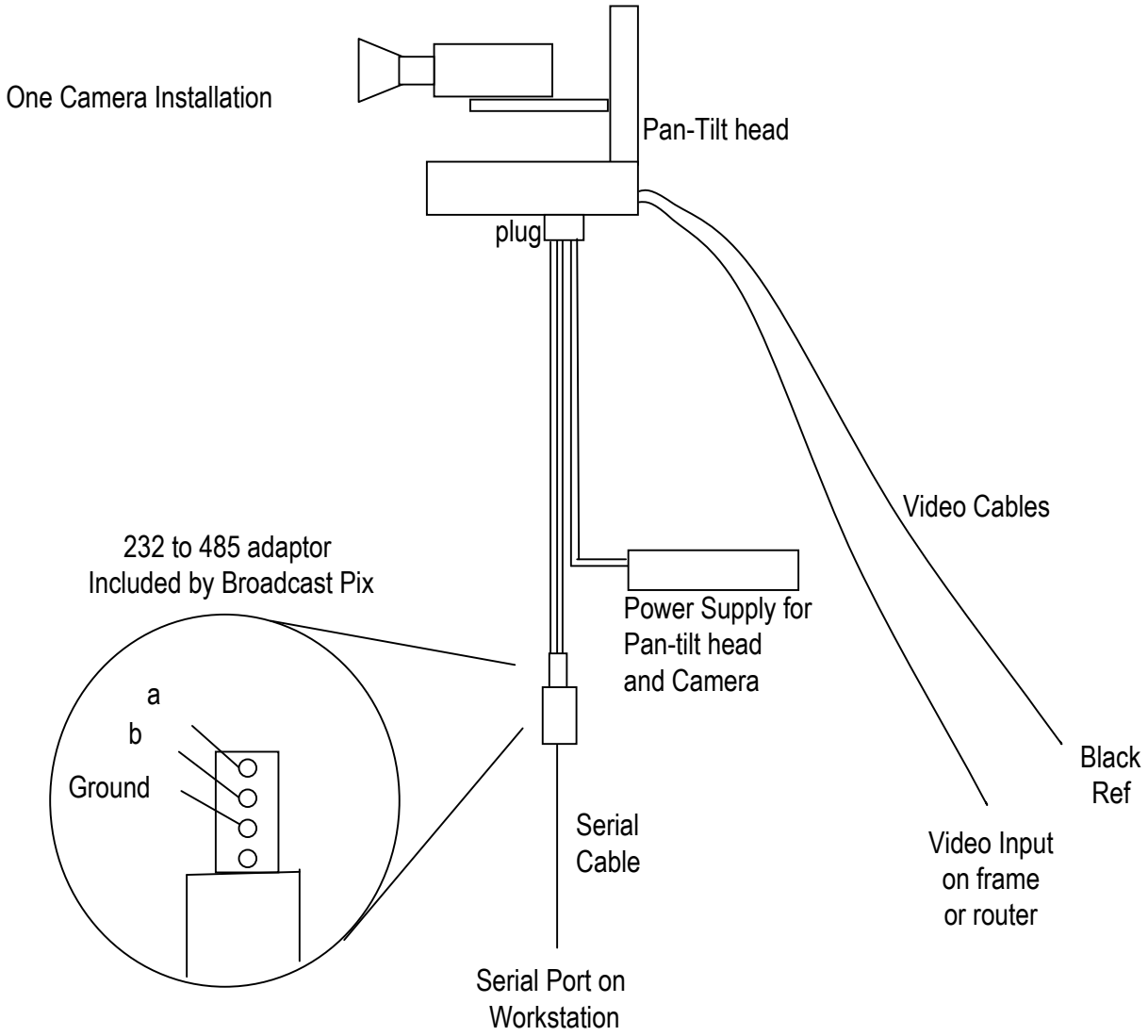
7.3.1 One Camera Installations

1. Two video cables run to the pan/tilt head: one from the Broadcast Pix system's for the video signal, and one for black reference.

2. Run a serial cable from the serial port of the Broadcast Pix workstation to the Broadcast Pix 232-to-485 converter, as shown below.

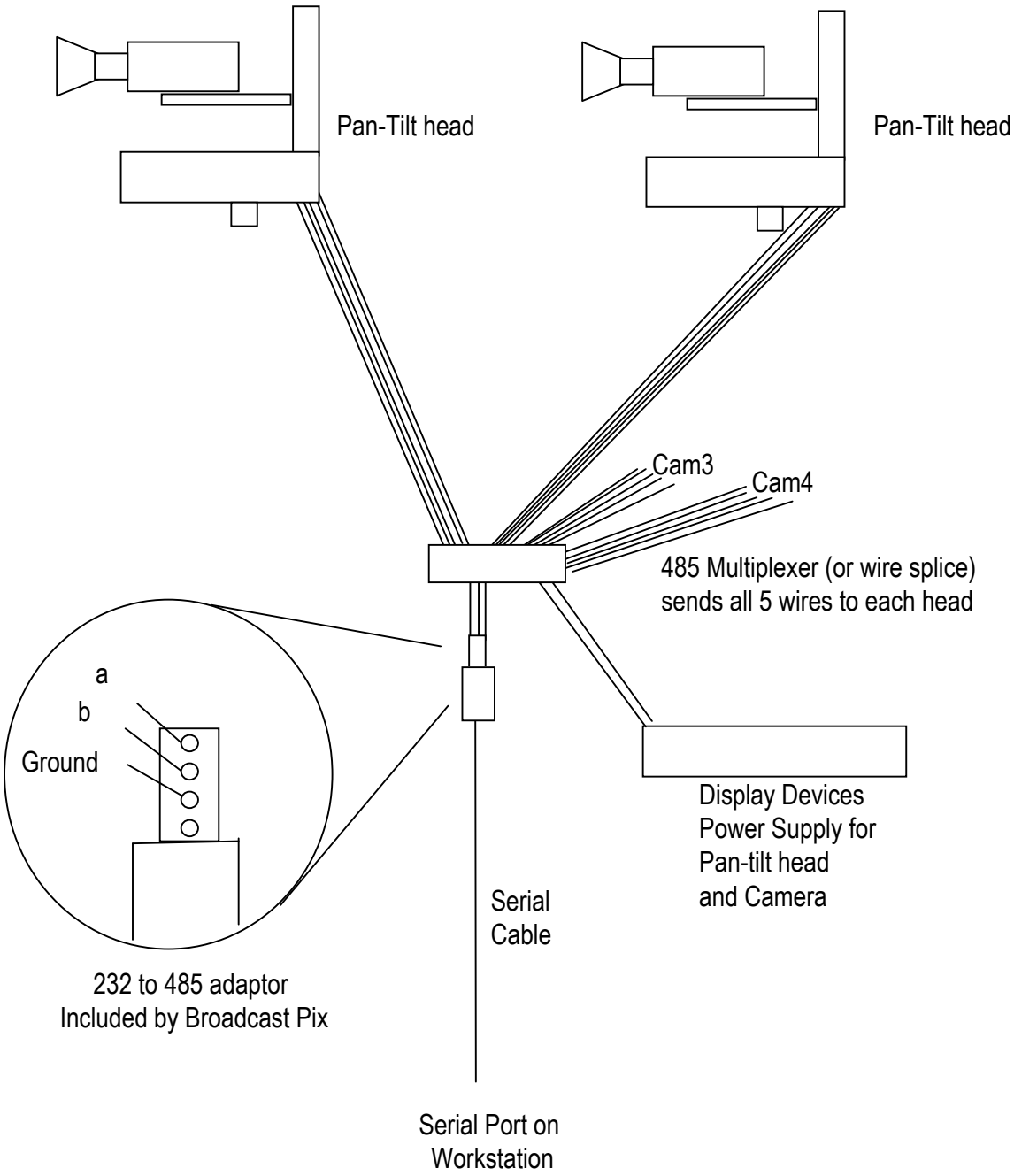
3. Run a three wire cable from the converter plug to the plug on the pan tilt head.

4. Run a power cable from the Display Devices power supply to the same plug at the pan tilt head used in step two.



7.3.2 Multi-Camera Installation

The difference between one camera and studios with 2,3 or 4 cameras is that the three wires leaving the 232 to 485 converter need to be multiplied to go to each head. This can be done with a multiplexer, or splicing wires together. The multi-camera set-up is illustrated below:



7.4 Adding the Camera Control Option to an Existing System

If you purchased your Slate system with the Camera Control option, the software was installed at the factory, and so you can skip the following section. If you purchased the camera control option after the fact, then you need to enter the Options Key Code, which was supplied once you ordered the Camera Control Option.
See section A.3 for more information about Installing System Options.

7.4.1 Setting the COM Port

Next you need to set the appropriate COM Port.

1. In BPswitcher, go to **Setup, Device Settings,** and select **Camera Control.**

Hitachi Window

Sony Window

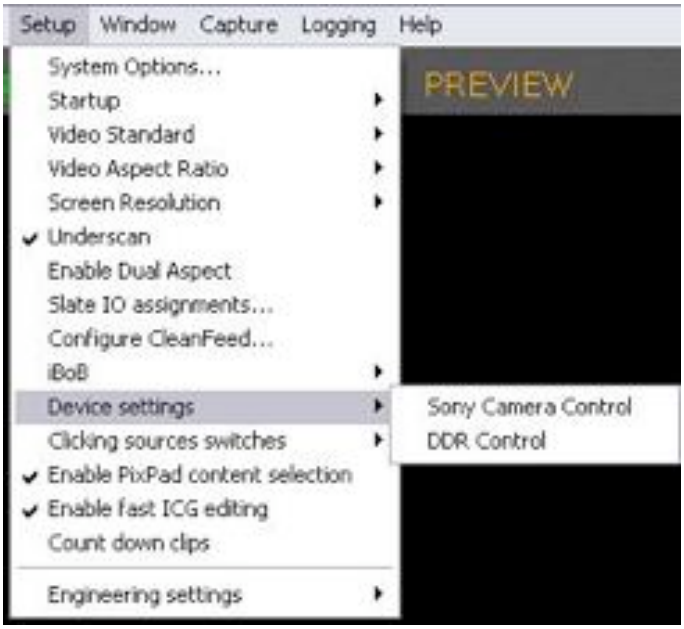
2. Enter the COM port for each camera you have attached the serial cable to. This is set at the factory to COM1 as a default, if the serial cable is installed in a different port, you want to change to the appropriate one.

7.5 Changing Camera Control Settings

It is possible to change various settings in the Camera Control Settings Window. For Sony Camera Control you may change the COM port assignment for each camera, as well as where the camera is located on the daisy chain.

7.5.1 Sony Camera Control Settings

1. In BPswitcher go to the **Setup** menu and select **Device Settings**, **Sony Camera Control** as shown at the right. The settings window will appear as shown below.



2. Click the drop down menu to change the Camera Number, Comm Port and Daisy Chain Position.

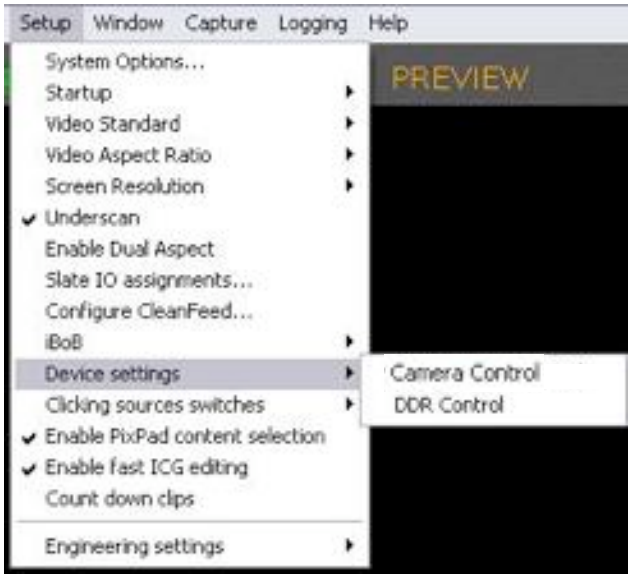
3. Click on **Close** to save the settings, and to close the window.

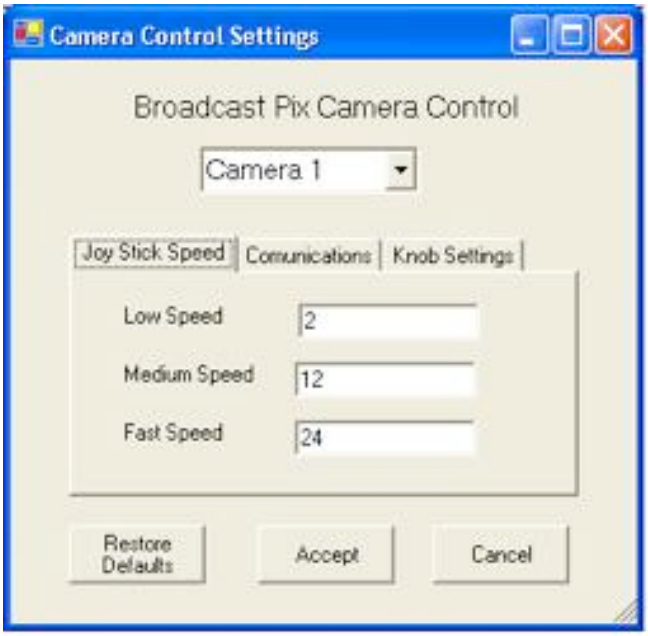
7.5.2 Hitachi Camera Control Settings

It is possible to change the three speeds that are used for manual camera motion speed from the joystick and knobs: slow, medium and fast.
Changing these three joystick speeds only affects joystick speed, and does NOT change the three recall speeds described and they are only available on Hitachi cameras.

To Change the Camera Speed Settings:

1. In BPswitcher go to the **Setup** menu and select **Device Settings**, **Camera Control** as shown at the right. The settings window will appear as shown below.

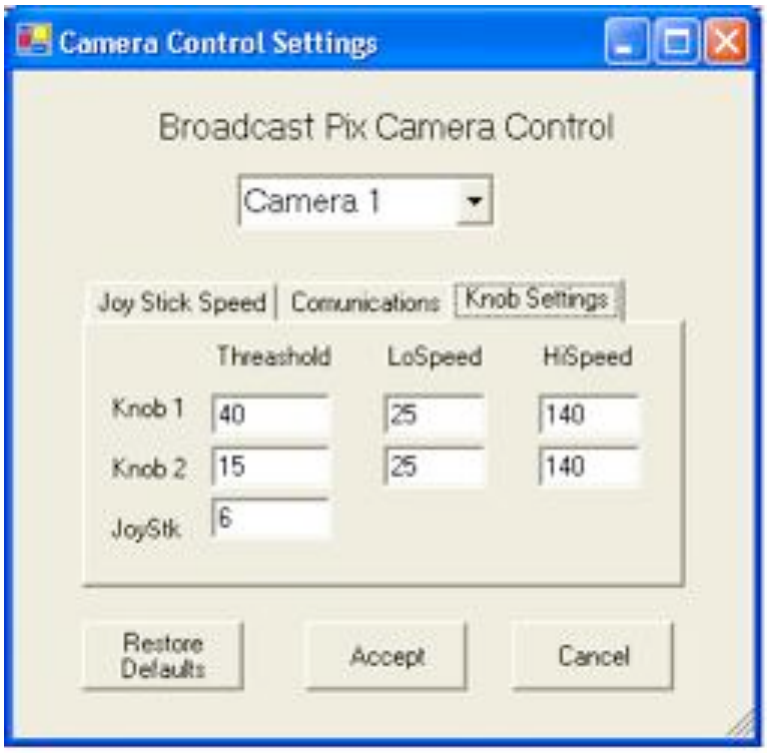




2. The settings window will show the current camera speeds. Enter the new desired **speeds** and press **accept**. Note on Hitachi: you can only enter speed numbers from 20 to 254. Do not enter numbers below 20 or above 254.

   You can return to factory speed setting by clicking on **Restore Defaults.**

3. For Knob Settings, click on **Knob Settings** and the following will appear.



4. Select the **knob settings** and **threshold values** desired and press **accept.**

7.5.3 Setting Camera Numbers for Hitachi Camera Control

After installation is complete, you need to set the address of each Pan/Tilt head. All Eagle and Vector Pan Tilt heads are set at the factory to have the addresses remotely programmed. If you have trouble with anything in this section, go to the Display Devices Operations and Instruction Manual and be sure your head is set to remote address control.

To assign numbers to each camera:

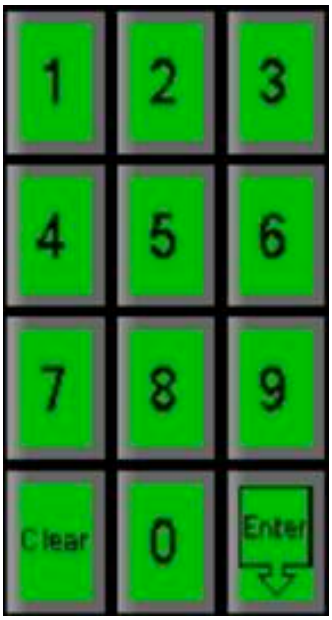
1. Create a Broadcast Pix show, as described in section 2.

2. Add camera control to this show, as described in section 7.6

3. Decide what address each Pan/Tilt Head is going to be. In order to set the address of the head, the panel sends out a command to all connected heads. So in order to get the correct address to just one head, all of the other heads not being programmed need to be powered down, by unplugging them.

4. On the control panel, press the **[Camera Control]** device button, and then the PixPad will show four Cameras. For this operation it makes no difference which one you press, so press any one of the four: **[1, 2, 3 or 4]**. On the next PixPad press **[Settings]**. On the next PixPad press the **[Cam Cntrl]**. On the next PixPad press **[Next]**. On the next PixPad press **[Next]**, and you should arrive at the following PixPad

5. On the PixPad shown above, press the **[Set Cam Addr]** PixButton, which will bring up a numeric keypad, as shown below left.



6. Use the numeric keypad to enter the number you wish to assign to this camera, either **1,2,3 or 4.** The address you select will appear in the large display. If it isn't correct, press clear and press the desired number.

7. Press the **[Enter]** PixButton, and the PixPad shown in the upper right will appear.

8. Press the **[Change Address]** PixButton and the selected camera number will be assigned to the head that is not unplugged. (If instead you want to cancel at this point, press the [Cancel] PixButton.)

To verify it was programmed correctly, you can press Cam Select at the bottom of the Pix pad and select the camera you just programmed. Move the joy stick and the head of that camera should move. If the head does move, you can unplug that camera and repeat the process with the remaining cameras, to assign each a number.

7.6 Adding Camera Control to a Show

Once setup and installation is complete, you must now add the device to a show using a wildcard device on the switcher.

1. Open **PixMaster** and select the **show** to which you want to add camera control.

2. Click on **Show Settings** and the Show Settings window will open.

3. Click on **More Devices** and the More Devices window will open, as shown.

4. Select the **wildcard device button** to which you want to add camera control and a drop down menu will appear, as shown at the right.

5. Click on **camera control**, and it will appear on the PixButton, as shown at the right.

6. Click on **OK** and then **Save Show.**

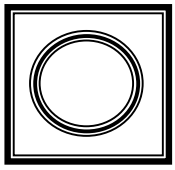
7.7 Selecting Camera Control in a Production

To assign the device controls to Camera Control:

Press the **Camera Control** wildcard [Device Selection] PixButton
and it will illuminate orange and the following device controls will be appear.

Camera Control device controls

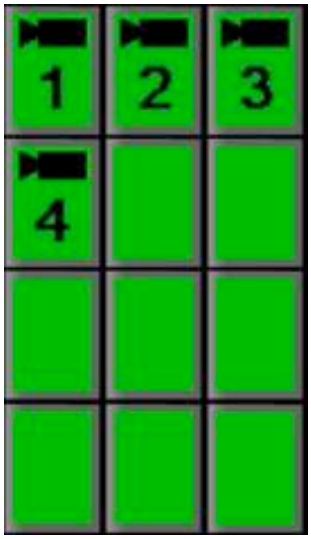
Large Display
shows active camera selected, and knob values



3D Joystick
Positions
the active Camera:
- Left-right: pan
- Up-down: tilt
- Twist: zoom

3 Knobs
Focus, Iris and Settings

Motion Controls
Change the speed of manual pan/tilt on Hitachi cameras only.



PixPad
To select which camera you wish to control, and then preset positions and settings

When you press the Camera Control PixButton, the active camera will be whichever camera was last used, or Cam 1 if you are just starting.

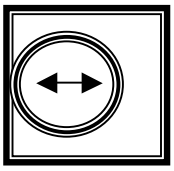
To select a different camera to control, press the 1, 2, 3 or 4 on the PixPad. For example, to control camera 2, press the [Cam 2] PixButton, and the large display will show Cam 2. Now the joystick, knobs and PixPad will be assigned to Cam2.

The large display indicates:
1. The top left corner always shows the device currently assigned to the panel's bank of device controls. In this case, the words "Cam Cntrl" indicate that they are set to camera control.
2. "Cam 1" indicates that Camera 1 is the camera now being controlled
3. The first two knobs are assigned to focus and iris, while the third changes to one of many settings

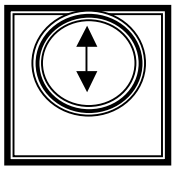
7.8 Controlling a Camera Manually

Whichever camera is active may be manually controlled with the joystick and knobs. To control camera 1, the display must show that it is active as follows:

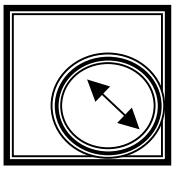
1. To manually control the active Camera's pan and tilt position, move the **joystick**



Pan left – right



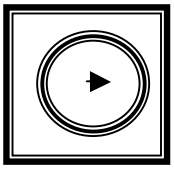
Tilt up – down



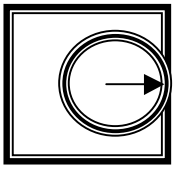
Pan and Tilt simultaneously

When the joystick is moved diagonally, the camera will pan and tilt simultaneously.

For **Slow** movement, move the joystick **a little**



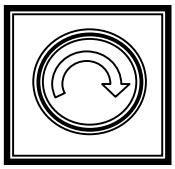
For **Rapid** movement, move the joystick **a lot**



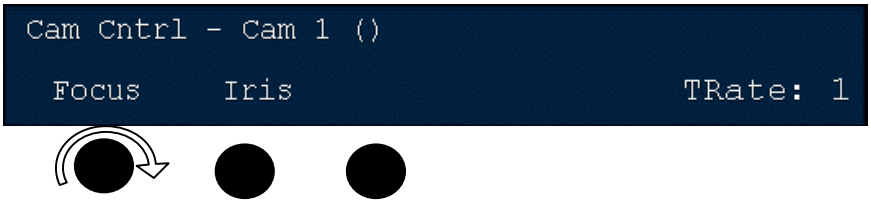
2. To Zoom the Camera **twist** the Joystick

For **Slow** zoom, twist the joystick **a little**

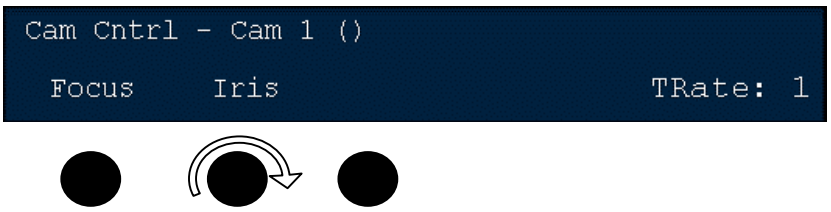
For **Rapid** zoom, twist the joystick **a lot**



3. To adjust the focus of the active camera, twist the **left knob**



4. To adjust the Iris of the active camera, twist the **center knob**

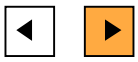


These controls only apply to Hitachi Camera Control. Sony cameras have built-in motion controls. The more you move the joystick the faster the camera will move, and the less the joystick is moved, the slower the camera.

5. To Control the speed of manual camera travel

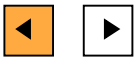
Fast

If you wish to move faster, before touching the joy stick, press the **[>]** motion button and it will illuminate. Now when you move the joystick the motion will be at the fast speed specified in under settings. When you let go of the joystick, the [>] illumination will go off, and the speed will return to moderate.



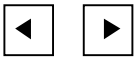
Slow

If you wish to move slower, before touching the joy stick, press the **[<]** motion button and it will illuminate. Now when you move the joystick the motion will be at the slow speed specified in under settings. When you let go of the joystick, the [<] illumination will go off, and the speed will return to moderate.



Medium (Normal)

When you let go of the joystick, the speed will automatically return to moderate, and the motion button illumination will go off.



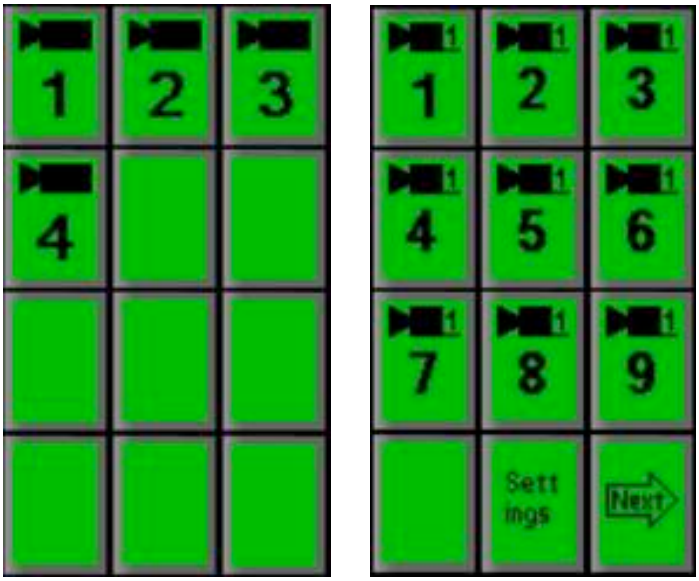
NOTE: All three of the above speed setting may me adjusted, as described in section 7.5

7.9 Setting Camera Preset Positions

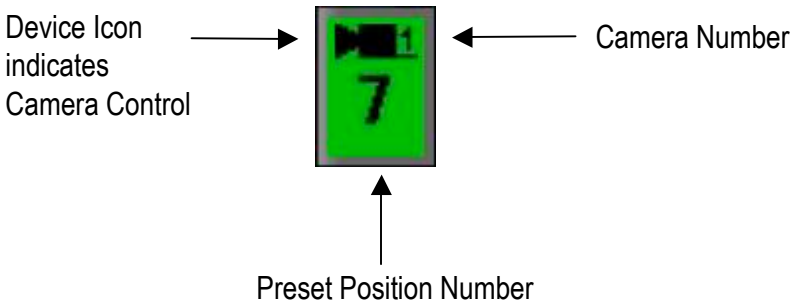
One of the most valuable ways to use camera control is with preset positions. Each Hitachi camera may have up to 31 preset positions, where as each Sony camera may have up to 6 presets. These can be assigned to the PixPad for rapid recall.

To assign preset positions:

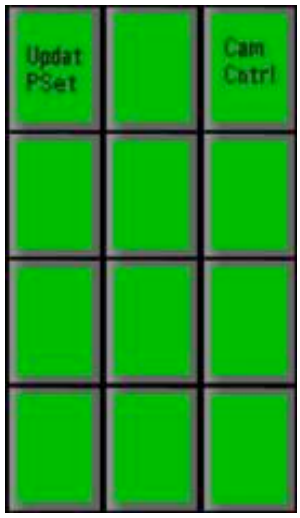
Select the camera you wish to add a preset position for, by pressing the Cam 1,2,3 or 4 PixButton, as shown on the below left. For example, for Camera 1, press the **[Cam 1]** button and the Presets PixPad for Cam1 will appear as shown on the lower right



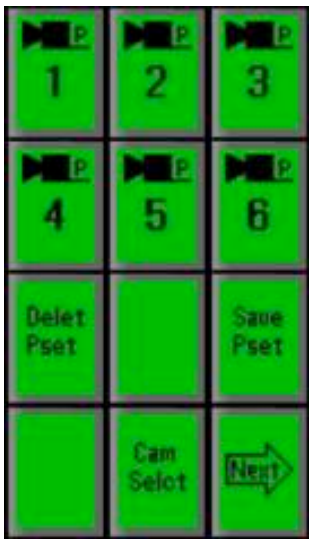
On the above PixPad, the PixButtons for each Preset Position tell you the following information. Note that each camera's preset positions are independent. For example, each camera can have a preset position 7 saved, but none of these preset position 7's are related to each other.



2. Press the **[Settings]** PixButton, on the PixPad shown above, and the following PixPad will appear:



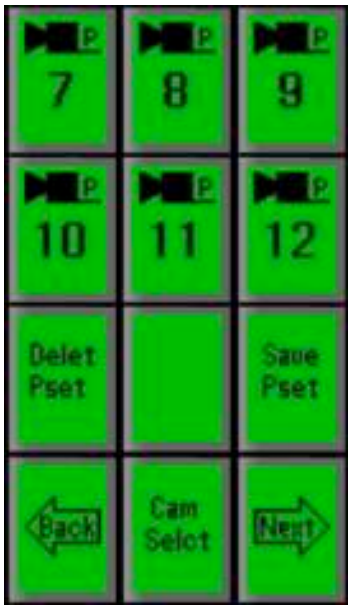
3. Press the **[Update PSet]** PixButton, and the following PixPad will appear



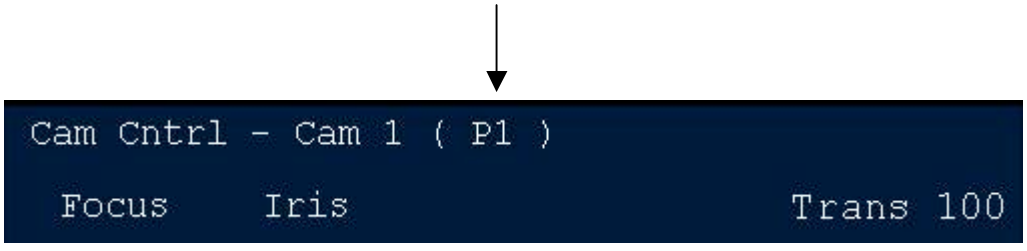
4. Manually move the camera to the desired position you wish to save by using the **Joystick** and the **[Focus]** knob, as described in section 7.3 (Bring the desired camera up on the preview monitor by pressing its source button in the preview row, so you can see its position as you adjust it.)

NOTE: the Preset Position will remember pan, tilt, zoom, focus and recall speed. The first four will be captured wherever you manually leave the joystick and focus knob. Recall speed will be captured at whatever speed is set to, see section 7.5.

5. When you have the camera positioned where you want it, on the above PixPad press the button for the Preset Position where you would like to save this camera position, either 1,2,3,4,5 or 6. If you wish to save it in a preset Position above 6, then press [Next] button and the following PixPad will appear. If desired keep pressing the Next button until you reach the Preset Position you wish to use. For example. If you wish to save it on Preset Position 1, press the **[Preset 1]** PixButton on the first page of Preset PixPads.



6. Press the **[Save Pset]** PixButton, and now the camera position will be saved in the location you just chose. The large display will show the newly saved Preset Position, as shown below, P1.



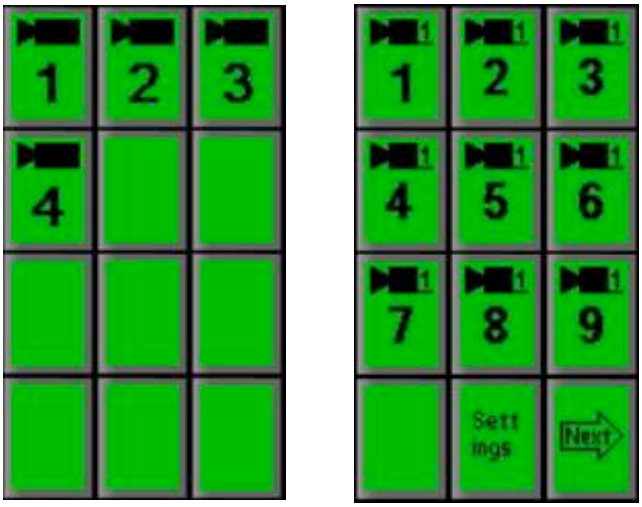
NOTE: If Preset 1 already had a saved preset position, this will now be overwritten with the position you just saved.

7.9.1 Recalling a Preset Camera Position

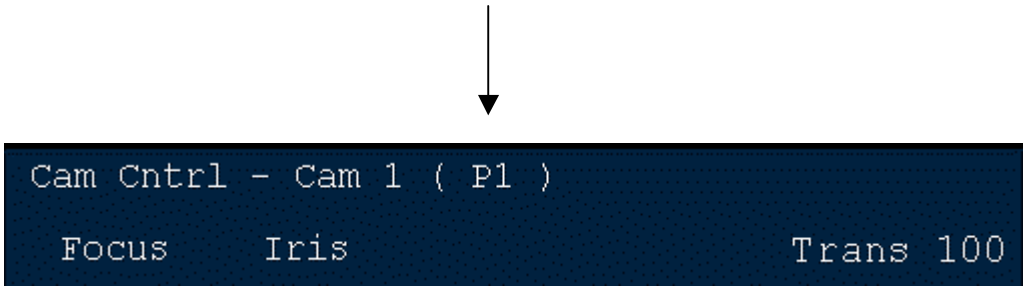
Preset Positions are designed to be recalled rapidly.

To recall a preset position:

1. Select the desired camera from the list available on the top level PixPad for camera control as shown on the lower left, such as Camera 1. The Preset Positions PixPad for the selected camera will appear, as shown on the lower right.



2. If you want to recall one of the first 9 positions for this camera, press the desired **preset position PixButton** and that preset will be loaded, the camera will move to it, and the large display will show that preset position number as shown below.



3. If you wish to recall a preset position that is beyond the first 9, then press the **[Next]** PixButton**,** and the next 9 will appear, as shown below

Keep pressing the next button to reach the preset you wish. You can back up by pressing the **[Back]** PixButton.

When you reach the desired location press its **[Preset Position]** PixButton. The camera will move to it, at the recall speed saved with this preset, and the large display will show this preset position number

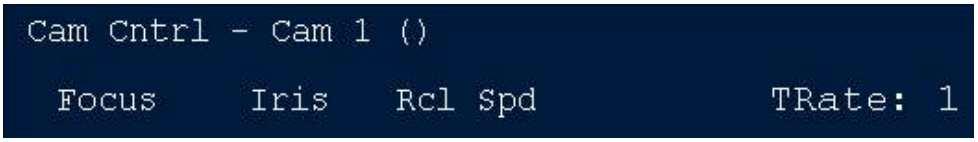
7.9.2 Recall Speed for Preset Positions

Each Hitachi camera can have 31 preset positions saved. In addition to remembering tilt, pan, zoom and focus, each of these 31 positions can also remember a recall speed: either fast, medium or slow. When each preset position is saved it will automatically set this recall speed at whatever speed the system is currently set to.

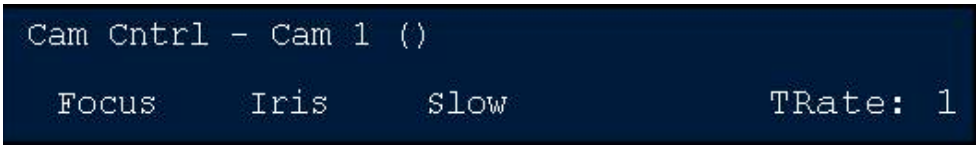
To set the Recall Speed:

1. Press the **[Settings]** PixButton, and the settings PixPad will appear:

2. Press the **[Recall Speed]** PixButton and the large display will show the current speed at which the recall speed is set to: either: Fast, Medium or Slow



3. Turn the **right knob** to the desired speed, and it is set.



7.10 Camera Control Settings

The Broadcast Pix camera control option can adjust many parameters, from panning speed and travel limits to white balance and other camera setups. Not all of these controls are implemented for the Sony camera control option.

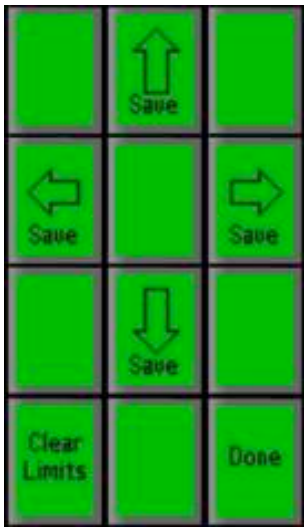
7.10.1 To set Travel Limits of Tilt and Pan

1. Select the camera which you wish to set limits on by pressing the **[Cam 1,2,3 or 4]** PixButton, and its first Presets PixPad will appear, as shown below:

2. Press the **[Settings]** PixButton, and the following Settings PixPad will appear

Settings PixPad

3. Press the **[Set Limit]** PixButton on the options PixPad, and the following PixPad will appear.



4. Use the 4 save PixButtons on the above PixPad to save each of the four limits, after using the Joystick to manually move the camera to each position. For example, move the camera to the upper limit you wish to set and then press the **[Save ^]** PixButton. Repeat for any other limits you wish to set. As soon as you press one of the save buttons, the position is saved.

5. To return to the Settings PixPad home page, press the **[Done]** PixButton

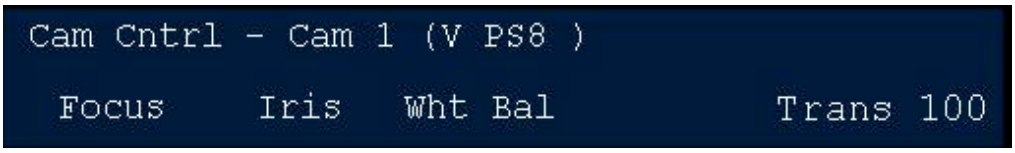
To Clear All Travel Limits:

On the above PixPad, press the **[Clear Limits]** PixButton, and all four limits will be removed for this camera.

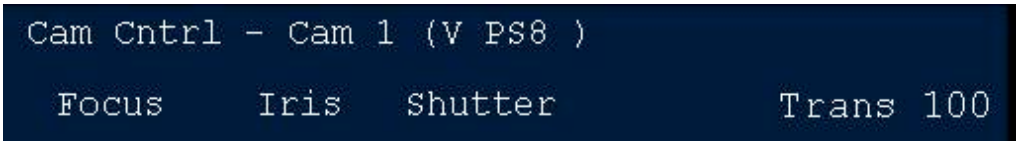
7.10.2 To Adjust Camera Functions

The Options PixPad can be used
to set a wide variety of camera functions.

1. To adjust White Balance
   Press the [**White Balance]** PixButton and the display will show what is illustrated below.
   Turn the **right knob** to adjust.



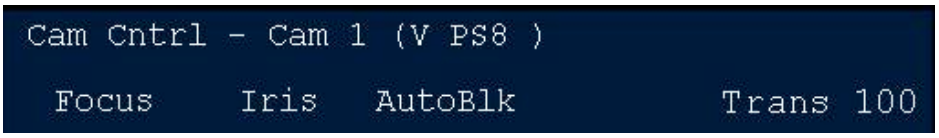
2. To adjust Shutter
   Press the **[Shutter]** PixButton and the display will show what is illustrated below.
   Turn the **right knob** to adjust.



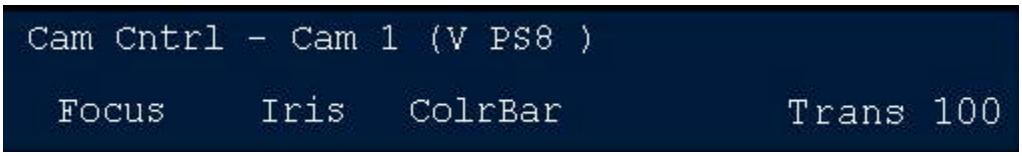
3. To adjust Contrast
   Press the **[Contrast]** PixButton and the display will show what is illustrated below. Turn the **right knob** to adjust.

4. To adjust Auto White
   Press the **[Auto White]** PixButton and the display will show what is illustrated below. Turn the **right knob** to adjust.

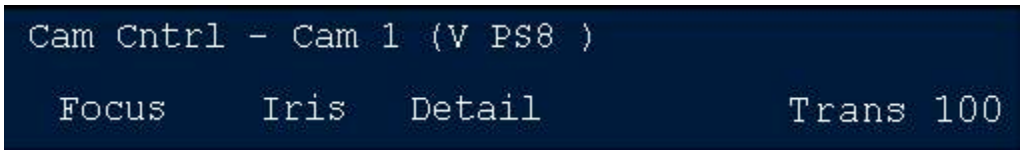
5. To adjust Auto Black
   Press the **[Auto Black]** PixButton and the display will show what is illustrated below. Turn the **right knob** to adjust.



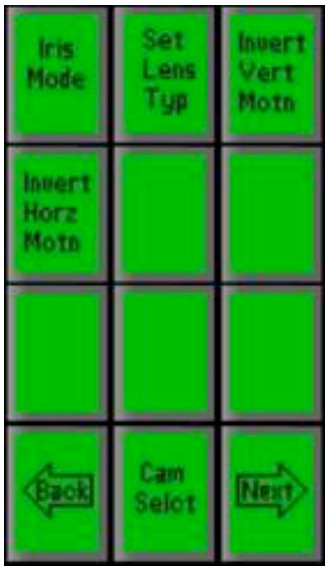
6. To turn on/off color bars in the camera
   Press the **[color bars]** PixButton and the display will show what is illustrated below. Turn the **right knob** to adjust.



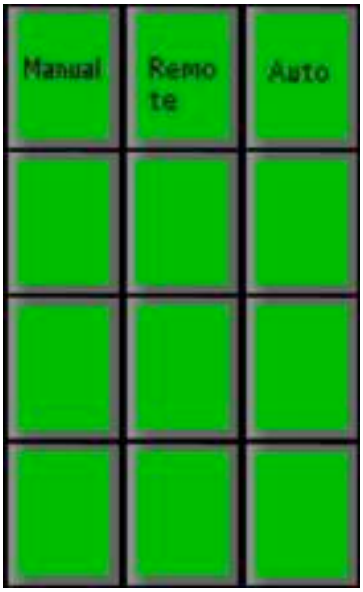
7. To adjust Detail
   Press the [**Set Detail]** PixButton and the display will show what is illustrated below. Turn the **right knob** to adjust.



8. To adjust Lens Type
   Press the **[Next]** PixButton and the additional controls will appear as shown below. Then, Press the **[Lens Type]** PixButton and the display will show what is illustrated below. Turn the **right knob** to adjust.



9. To Change the Iris Mode
   Some cameras have automated iris capabilities, which you can set on automatic or use manually. To select iris mode press the **[Iris]** PixButton on the above PixPad, and the following PixPad will appear.



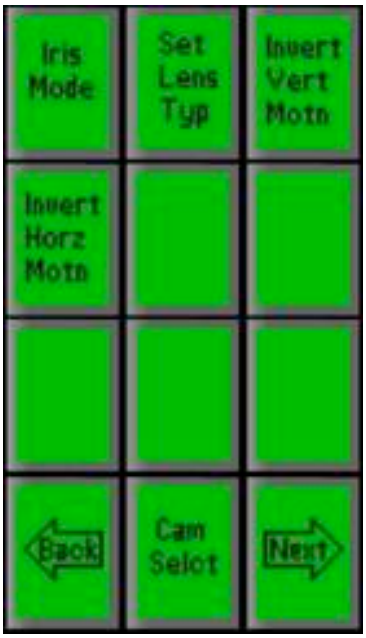
Then select either:

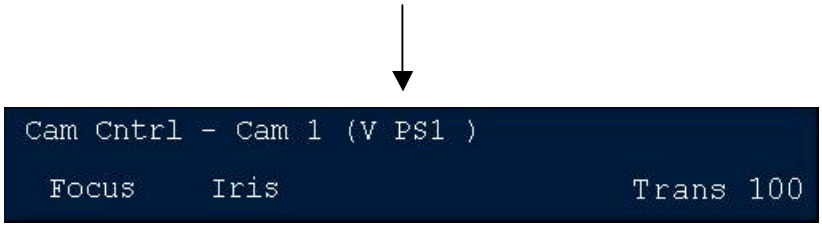
Auto – for the camera to automatically set the Iris

Remote – for the middle knob on the Broadcast Pix panel to control Iris

Manual – for manual control of the Iris by the iris ring on the camera

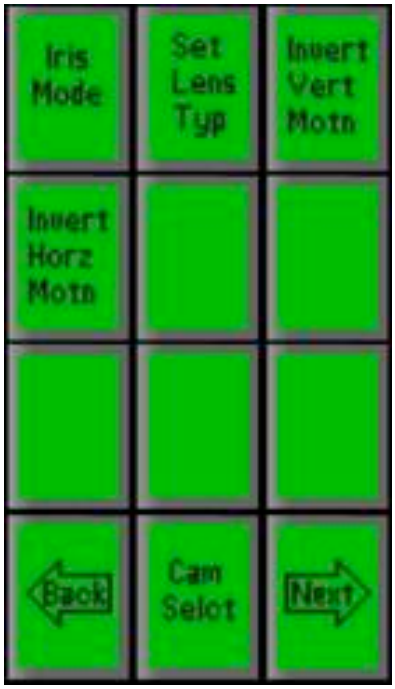
10. To Invert Tilt
    In some installations that Pan/Tilt head is installed upside down. The inverse tilt command flips the joystick around so that pushing it up still makes the camera go up. To Invert Vertical Tilt press the **[Invert Vertical Motn]** PixButton, as shown below, and the large display will add the add V, as shown below.

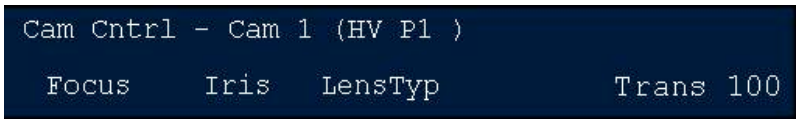




11. To Invert Pan

In some installations that Pan/Tilt head is installed upside down. The invert horizontal command flips the joystick around so the pushing it right still makes the camera pan right. To Invert horizontal pan press the **[Invert Horiz Motn]** PixButton, as shown below, and the large display will add the add H, as shown below.





NOTE: When the camera is mounted upside down, and so these two invert commands are applied, care must be taken when setting camera travel limits, as these left/right/up/down limits will now refer to the joystick position, not the camera position (as the camera is upside down). On Sony cameras, you may need to go in to the Sony Menu using the remote control supplied by Sony to invert the camera.

7.11 Optional Audio-Follow-Video Control

As an option the Broadcast Pix switcher can provide control of virtually any external audio mixer, digital or analog, through a Musical Instrument Digital Interface (MIDI). Controls can be as simple as turning on a source when it transitions to program, or as complex as calling up scene changes to modify effect parameters like reverb, panning and equalization controls.
This option can either use one of the computers COM or USB ports to communicate data to and from the audio mixer using MIDI commands. Some mixers, such as the Yamaha 01V or 01V96, have a 'To Host' adaptor (either a USB-B and/or 8-pin mini-din connection) and/or a standard 5-pin MIDI connection. You may use any connection to connect the workstation to your audio mixer. If using a standard MIDI connection, use the supplied M-Audio Uno USB to MIDI converter.
If using a COM port you will need a 8-pin mini-din to DB9 serial cable (the same which is used for Sony Camera Control). For assistance about which connection to use, please contact technical support.

7.11.1 Enabling Audio-Follow

In BPswitcher, go to **Setup, System Options** to activate the **Install Options** menu. Select **Audio Follow** from the drop down menu and enter the enabling code number. This number is unique to your Slate system and was provided to you when you purchased the option. Should you need it again, it is available from customer support by providing the Slate serial number of your system, which is also displayed on the Install Options menu. Click on **Enable Option** and **Close,** a restart of the application is necessary to activate the option. See section A.3 for more information.

7.11.2 Audio-Follow Activation

Enable your audio mixer to receive MIDI commands on the port in which you have connected to, either MIDI, USB, PC or other depending on the manufacturer. You must also activate your mixer to be able to receive (RX) and transmit (TX) Program Change and Control Change information for Audio-Follow to work properly.
Refer to the MIDI section of your audio mixer's manual on how to select these options, as they may be located in several menus.

It may be necessary to install drivers from your audio mixer, depending on which connection you are using with your audio mixer:

- If you are using a Serial cable to control your audio mixer, no extra drivers are needed.
- If you are using a USB to MIDI converter, drivers are installed automatically using Windows XP when that device is plugged in.
- If you are using a standard USB cable, you must install the appropriate drivers that came with your audio mixer.

Once the appropriate drivers are installed, it you need to enable the the computer to use MIDI controls.

1. In Windows XP, go to the **Start Menu,** select **Control Panel,** then in the Control Panel window, select **Sound & Audio Devices (**the Speaker Icon), as shown below.

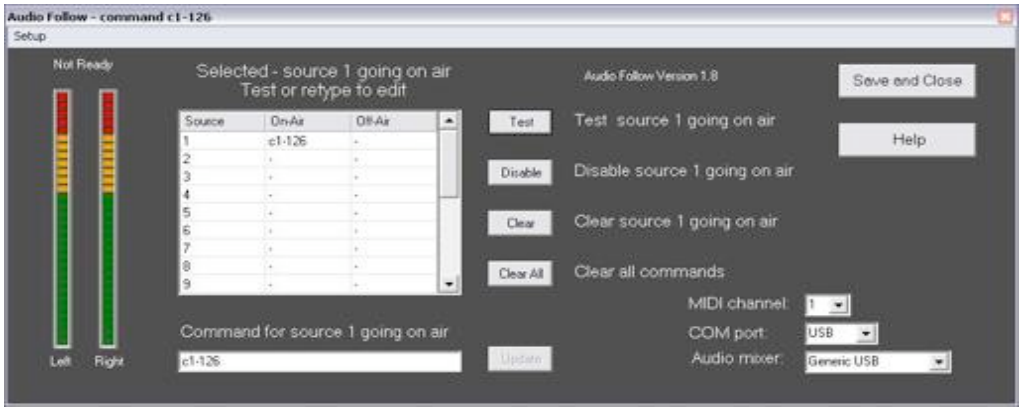
2. In the **MIDI Music Playback** section, **Select** your driver. Either USB Device, or the name of your mixer or other depending on the manufacturer.

3. Check **Use only default devices** and select **OK.**

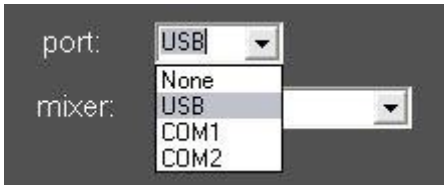
4. **Close** all the Window XP windows, and start BPswitcher.

5. Open the Audio Follow window by selecting **Window** in the BPswitcher menu, then **Float, Audio Follow**.

6. In that window select **Setup**, **View Setup**. The window expands to reveal the programming interface, as shown below.



7. In the lower right corner, set the **port** appropriately to an available communication port. Use **USB** when a USB cable is plugged in or **COM1** or **COM2** when a serial cable is plugged in. The “Not Ready” message changes to “Ready” when the port opens without errors. If a COM port is in use by another device, like camera control, Audio Follow will not work. You need to disable that port on the device to make it active in Audio Follow.



7.11.3 Audio-Follow Setup

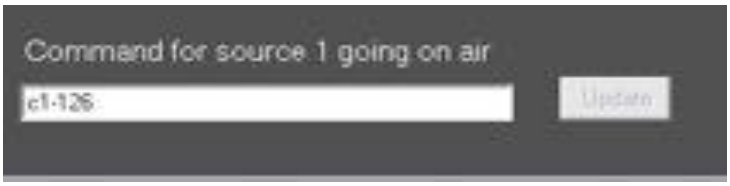
1. Program the **On-Air** and **Off-Air** commands in the table provided. Sources 1-18 refer to the inputs on the Broadcast Pix Switcher. The first 9 sources are shown, scroll down to reach the shifted sources (10 through 18). Each show can have its own set of Audio-Follow commands.
   Two programming options are available for each table entry; either a single **scene change** (MIDI Program Change command) **or** one or more **control changes** (MIDI Control Change commands). You can not have both a scene change and a control change for one entry.

   Control changes may differ from manufacturer to manufacturer, so it is important to refer to your audio mixer’s manual for a complete list. For example on a Yamaha 01V, control numbers 1-12 effect the fader levels for channels 1-12.

Each control change is formatted by first typing in a **'c'**, followed by the control number (1 to 127), a hyphen (or minus sign) **'-'** and the desired value to set it to (0 to 127). More commands can be added by adding a space in between commands, leaving out the "c" in front.

For example to bring fader 1 to 100% volume type: **c1-127** in the **On-Air** column, to bring it off air type: **c1-0** in the **Off-Air** column.
To bring faders 1 and 2 up at 50% volume type: **c1-63 2-63** in the **On-Air** column.

If more space is needed, you may type in the bar below the grid, as shown below.



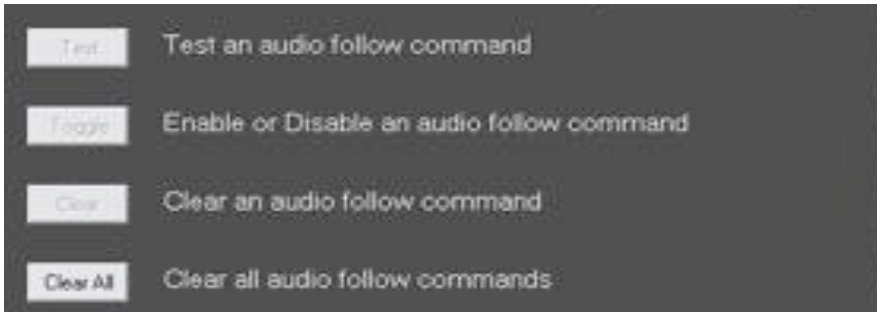
2. A scene change is a memory setting inside the audio mixer that can recall virtually any combination of settings. For example a scene change could recall a reverb effect and turn on fader 3. You need to first create and save your memories/scenes from your audio mixer, refer to your mixer's manual on how to save a scene change.

   To recall a scene change (either 0-99) simply type the number of the scene change in the On-Air or Off-Air column of the source. Only one scene change is allowed per source.

3. You may also 'Tie' one or more video sources together. When a source is tied to other sources, the on-air command is executed for all the sources but the command goes off-air only when all the tied sources are off air.
   For example, if you had an interview with 2 cameras and 1 microphone, you could have both camera sources tied to each other so when you transition between the 2 angles the audio does not go off air. The audio would go off air when a different source is transitioned to Program.

   To tie a video source to another video source, simply type: **t and the number of the other source.** (i.e. t2)

4. It is recommended to test these commands by first selecting the desired table entry and then clicking on the **Test** button. As commands are sent to the audio mixer, they are displayed in the header of the Audio Follow window. If everything is connected and programmed properly, the commands should be noticed on the audio mixer.



5. Sometimes it is desirable to disable a command temporarily, without losing its settings. This can be accomplished by pressing the **Disable** button. Disabled commands are shown in the table with leading minus signs **'-'.** When a command is disabled you may still have the option to test the command. To reactivate the settings, click on the **Enable** button.

6. Buttons are also provided for permanently clearing a table entry **Clear** and clearing all table entries **Clear All**. Note these functions are not undoable. Information will be lost when the buttons are selected.

7. To close the programming section, either click the **Save and Close** button or uncheck the **Setup, View Setup** menu option.

7.11.4 Audio-Follow Operation

Once set up, operation is completely automatic. Whenever a source goes on or off Program, the appropriate command (or commands) is (are) sent. On the control panel and the Multi-View, sources tally red when they are on program.

The Audio Follow window can be closed, but commands will continue to be sent.

Operation can be disabled and re-enabled using the **Setup, Disable audio follow** menu option in the Audio Follow window.

Section 8:
Multi-User Operation

8.1 Types of Multi-User Operation

While the Broadcast Pix Switcher provides unprecedented control to a single operator, it can be expanded to multi-person operation. Several types of two person operation are covered in this section of the manual:

A Separate Graphics Operator for the CG
Two Panels for Back-Up Redundancy
Two Panels for Two Show Creators
Adding a Remote Panel on-site
Adding a Remote Panel over the Internet
Large Teams with many panels

8.2 Optional Multi-Panel Support

Standard equipment for a Broadcast Pix Switcher includes both a control panel and a SoftPanel. Either can be used to control the show. For example, if the control panel is the one primarily used, and should fail and lose its network connection, then the SoftPanel can be used (or visa versa). Only 1 panel can be used at a time unless optional additional panel-licenses are purchased to support simultaneous multi-panel operation. You need panels to run Control Panels, SoftPanels and Scripts.

To see how many panels your system is licensed for, in BPswitcher, click-on the **About Tab** on the window in the lower right, and the following will appear. In this example unlimited panels are licensed.

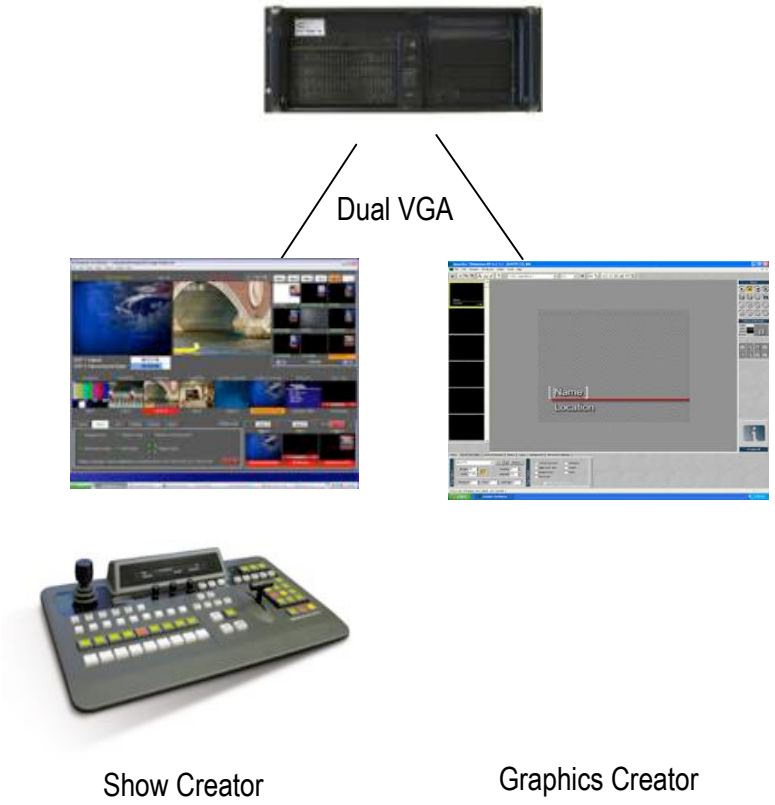
To see how many panels are connected to your system, the top left corner of BPswitcher shows you how many panels are currently connected, as shown below.

8.3 Adding a Separate Graphics Operator

In some live productions, it may be desirable to have two operators, one for graphics and one for everything else. This may be desirable if graphics are changing during a show such as for a sporting event, or if the show is so complex that the primary operator wants help.

8.3.1 Two Operators with Separate Graphics Operator and 1 Panel

To enable this environment, a second monitor should be added (all Slate systems support two monitors). Then the Multi-View can be displayed on the monitor for the Show Creator and the Inscriber GUI can be displayed on a separate the monitor for the Graphics Operator, as shown below.



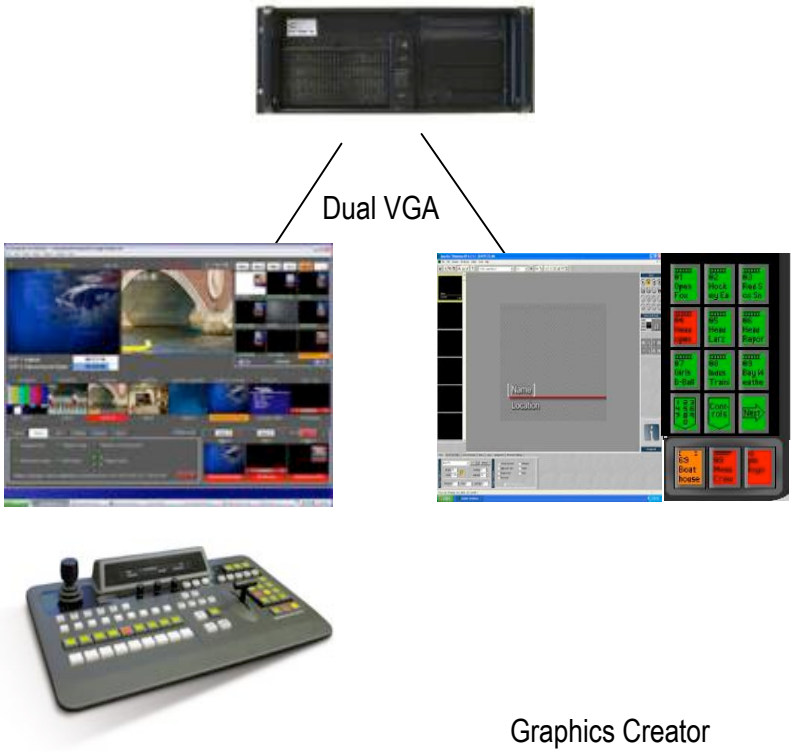
NOTE: Only one keyboard and one mouse can be connected to the workstation at any given time.

8.3.2 Two Operators with Separate Graphics Operator and 2 Panels

If you increase the number of simultaneous panels supported, see section 8.2, then the graphics operator can view a window containing all or a portion of the Broadcast Pix SoftPanel. This enables the graphics person to view exactly what the state of the panel is on the show creator's system. The graphics operator can use the portion of the control panel they see to perform functions normally done by the Show Creator, including selecting the next title to be taken to air, or taking them to air.

The two control panels can either be "locked" together or unlocked, see section 8.4.

If the graphics person does not wish to display the entire SoftPanel, they can just display a portion of it, as illustrated below, see section 8.5



8.4 Locking Panels Together

The two control panels can either be “locked” together or unlocked.

Locked: Locks together everything on all panels, so that they will be at identical states at all times. For example, if you press on any button on the control panel, it will now change on all SoftPanels.

Unlocked: The panel’s device controls on each panel can be set to different devices, and operated independently, while the fixed switcher control are still locked together. For example, it may be desirable for the Graphics person to always be able control the CG, no matter what device the Show Creator happens to be using.

To lock the the panels together:

1. In BPswitcher, click-on the **Panel** menu

2. On the panel drop down window click-on **Locked Panels** and a check mark will appear as shown below.

To return to an unlocked state, click-on **Locked Panels** again on the same menu

NOTE: On the above menu, if you select Force Disconnect, a window will appear which shows each of the panels’ IP address that are currently connected. You can then select one and force it to disconnect.

8.5 Viewing just a portion of the SoftPanel

You can make a SoftPanel larger or smaller by enlarging or shrinking its window as you would for any Window. In two person operation it is often desirable to shrink not just the overall size of the SoftPanel, but to also reduce the portion of the SoftPanel shown, for two reasons:

- Space: To conserve real-estate on the VGA monitor. For example, this allows the graphics operator to have the necessary portion of the SoftPanel displayed at all times, without taking too much room away from the Inscriber GUI.

2. Authorization: To avoid the second operator pressing a button on the SoftPanel which the control panel operator may not want them to have access to. For example, if the program and preview sources are not shown on the graphic operators monitor, then they can not be inadvertently pressed in the middle of a live show.

To display just a portion of the SoftPanel:

1. **Position the cursor** in the middle of the area of the SoftPanel you wish to keep.
   For example, you may want just the PixPad, or the PixPad and the Key PixButtons below it.

2. **Right-click**, and the following drop down menu will appear

3. Click-on **Zoom-In**, and then just a portion of the panel will be shown.

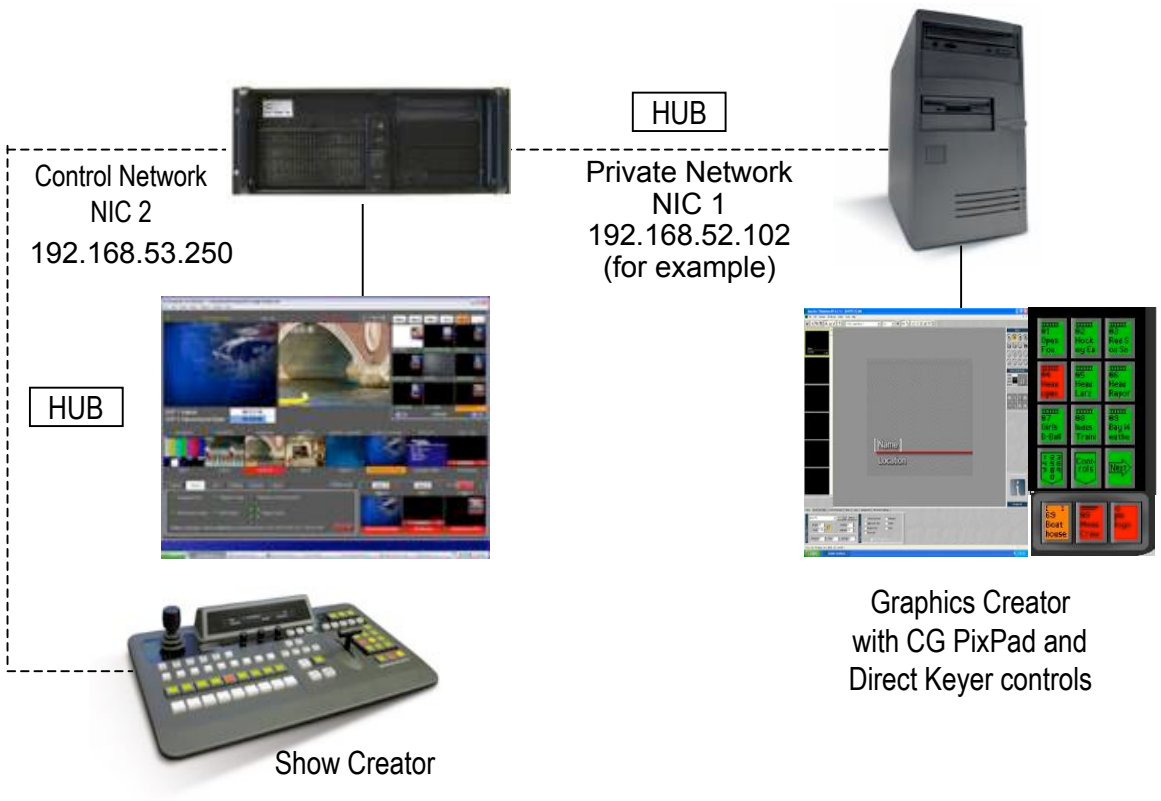
The resulting portion of the SoftPanel can then be sized and positioned like any other window. (To return to the full panel, right-click and click-on Show All)

8.6 Two Operators with Two Computers

In some productions it may be desirable to have the graphics person using a different computer than the host PC. This reduces the workload on the host PC, and also provides a wider variety of physical studio layouts. For example, this configuration might look like the following illustration. In this environment the graphics operator has their own computer. To implement this two computer system:

1. Network the two computers together using the additional network hub, which keeps the graphics network traffic from interfering with the control network traffic on the private hub that comes with the system. You will need to set a static IP address to each computer. Do not use the same IP address as the one used for the control network (192.168.53.250) as this will cause performance issues. Go to Control Panel, Network Connections to change the IP address of the network card. NIC 2 is for the Control Network for Broadcast Pix (this is located next to the USB ports) and NIC 1 is used for your local private network (this is located next to the graphics card).
2. Activate Windows file sharing, and share the folders C:¥graphics and D:¥clips

3. An additional Inscriber license will be necessary, which can be installed on any Windows PC. Load the Inscriber software on it and select Stand Alone when prompted by Inscriber during the install.

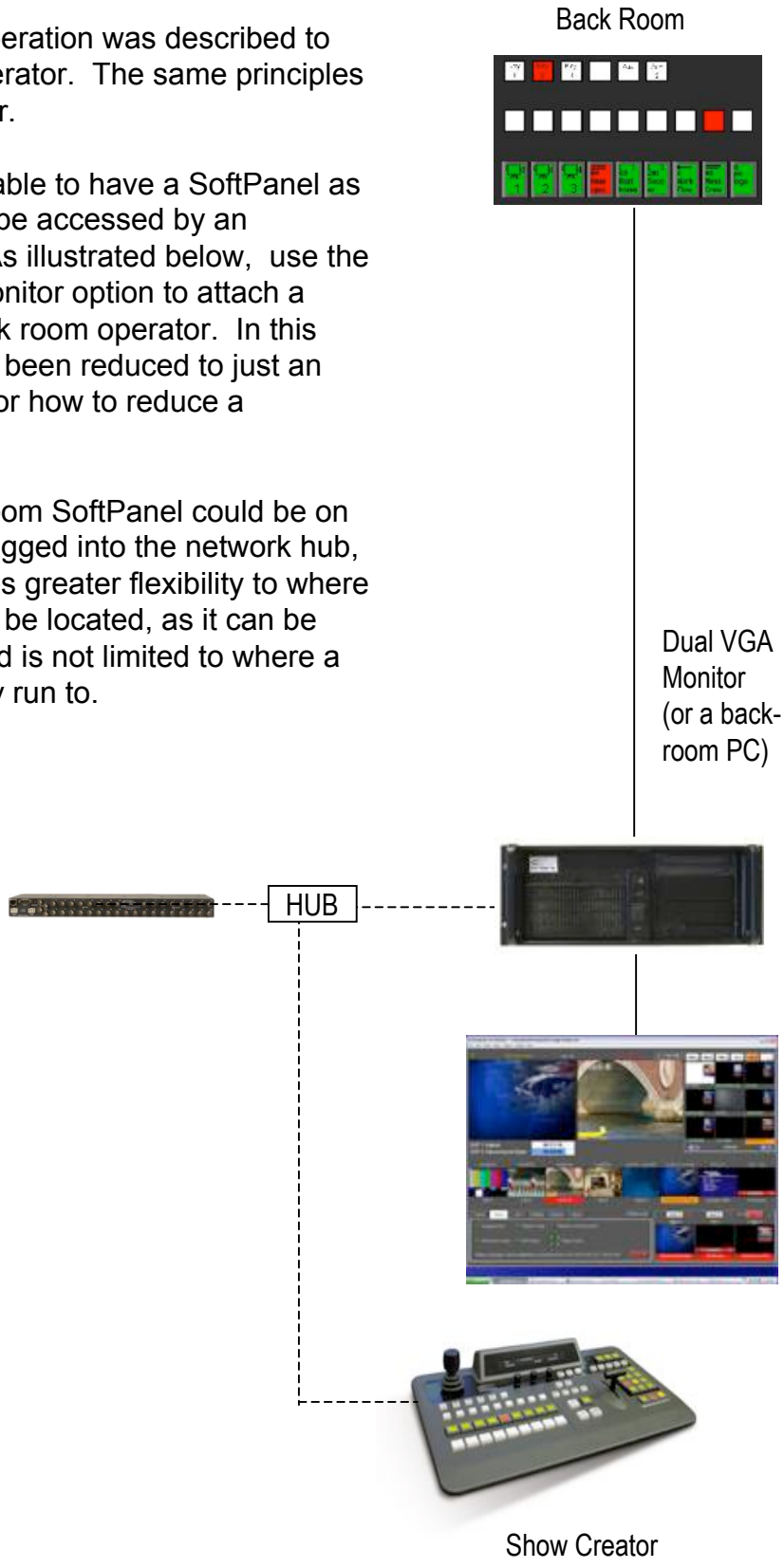


8.7 Remote Operator in the Back Room

In section 8.3.2, two panel operation was described to accommodate a graphics operator. The same principles apply for any second operator.

For example, it may be desirable to have a SoftPanel as a remote-aux-panel that can be accessed by an engineer in the back room. As illustrated below, use the SoftPanel option and dual monitor option to attach a second SoftPanel for the back room operator. In this illustration this SoftPanel has been reduced to just an aux panel, see section 8.5 for how to reduce a SoftPanel.

As an alternative, the back-room SoftPanel could be on a separate computer, and plugged into the network hub, see section 8.9. This provides greater flexibility to where the back room SoftPanel can be located, as it can be anywhere on the network, and is not limited to where a VGA monitor cable can easily run to.



8.8 Dual Panels for Back-Up Redundancy

The proceeding parts of Section 8, discuss using two panels for two operators. Two panels may also be used by one operator for redundancy.

The system comes with a physical panel and a SoftPanel that may be used by one person for redundancy. If one panel should fail, the other one may be used.

Physical and SoftPanels

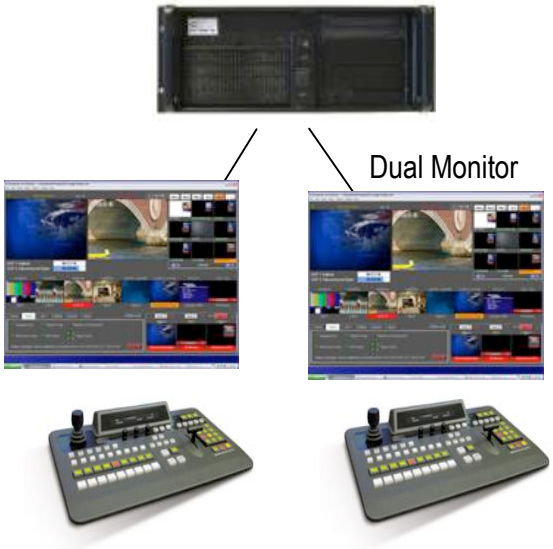
This capability is standard with every Broadcast Pix Switcher system. If the control panel should fail, then press refresh on the SoftPanel's web browser to connect it. (If you wish it to be always available, you need an optional additional panel license, see section 8.2)

Dual Physical Panels

An optional second control panel may be added, and dual monitor support. The second control panel comes with a panel license expansion (see section 8.2), so both panels are always instantly available.

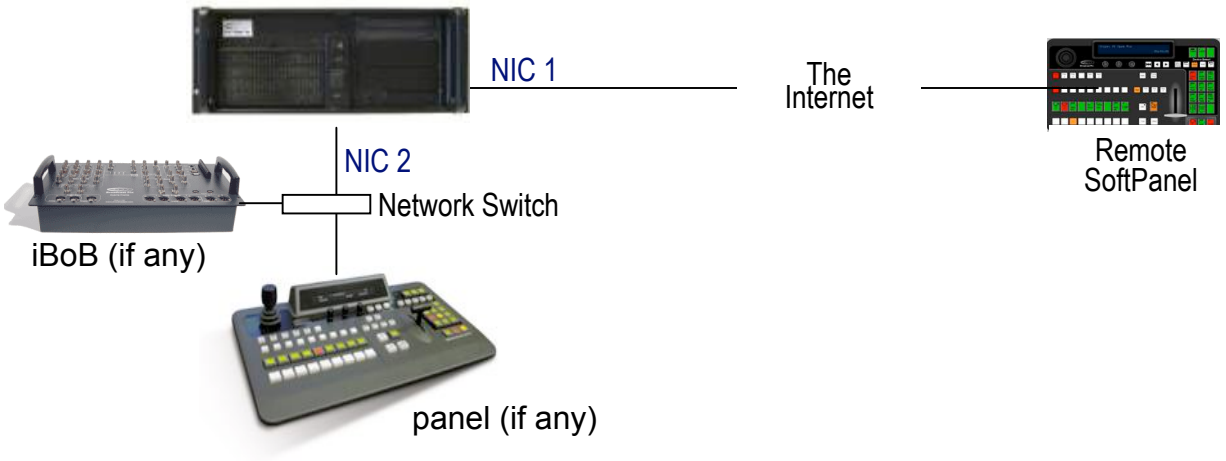
Redundant Physical and Soft -panels

Redundant control panels



8.9 Remote Control from a Distance

The Broadcast Pix system may be remotely controlled over the Internet. Remote control is done through the system's second Ethernet port (NIC 1)

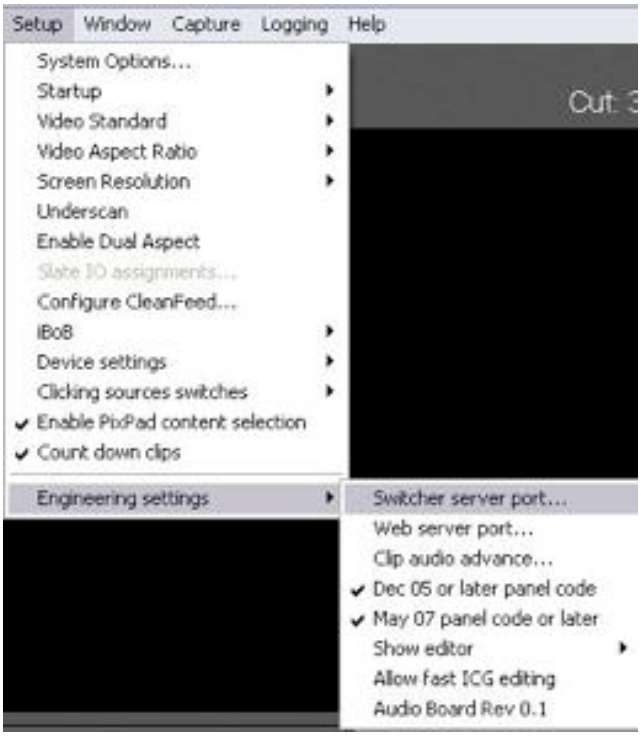


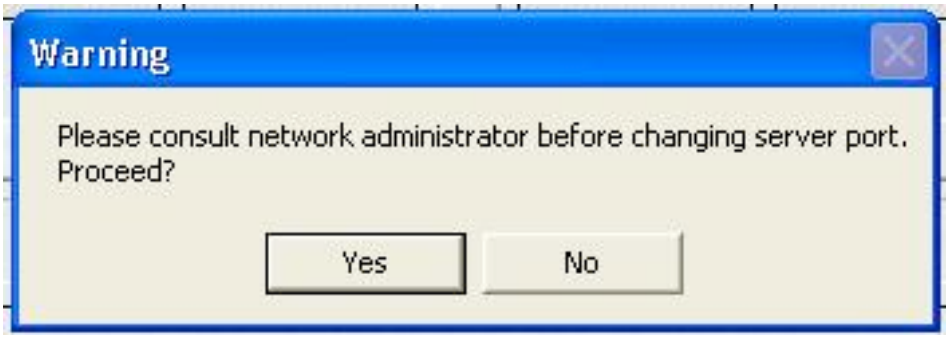
To remotely control a system:

1. Attach the remote panel to NIC1 on the Broadcast Pix workstation, which is the 1 GB Ethernet port, via an appropriate Internet connection (DSL is fine).

2. In BPSwitcher, select **Setup,** then **Engineering Settings** and on the drop down menu select **BPSwitcher server port**, as shown at the right. Click on it, and the warning window will appear as shown on the next page.

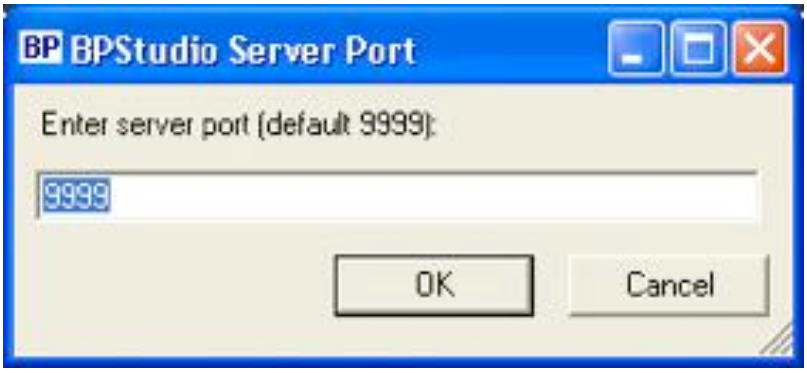
   A show must be closed for this setting to be visible. If a show is running, close the show (make sure a show is not set to auto load) and restart the application.





4. If you really want to go ahead and set the system to be remote controlled, click **Yes.**

   When you click yes, the BPSwitcher Server Port window will open, as shown below.



5. Enter the new BPSwitcher server port **number**.

6. Press **OK.**

NOTE: It is important to consult Broadcast Pix Technical Support prior to changing the Sever Port. Improper setup will cause BPswitcher to not operate correctly.

Appendix

A.1 Updating the Broadcast Pix Software

Broadcast Pix systems may be easily updated with new enhanced software that may be provided from time to time by Broadcast Pix. It is recommended to download the appropriate software on another workstation and copy the zip file via a CD or USB drive, and not connect the Broadcast Pix system to the internet.

To Download New Software:

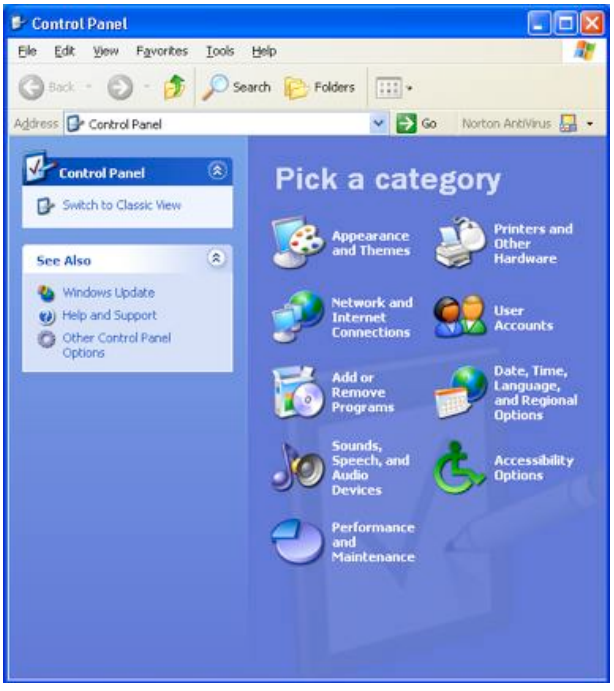
1. Register your unit by going to http://www.broadcastpix.com/support.html, where you will have access to the customer download page.

2. Download the current version of Broadcast Pix Software.

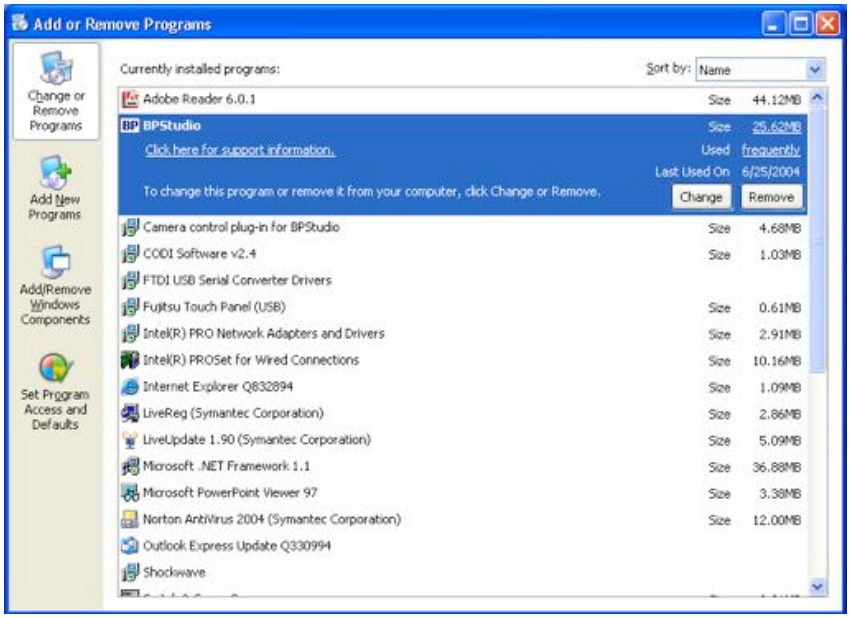
To Uninstall your existing version of Broadcast Pix Software

1. On the start menu, select **Control Panel.**

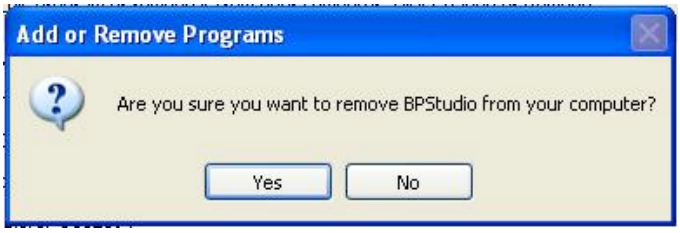
2. The following window will appear. Click on **Add or Remove Programs.**



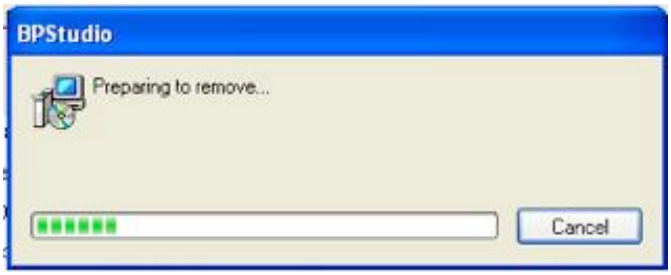
3. On the Add or Remove Programs window, highlight **Broadcast Pix Software** as shown, and click on **Remove.**
It is important not to remove any other software, as this may effect system performance.



4. It will ask if you are sure. Click **Yes.**



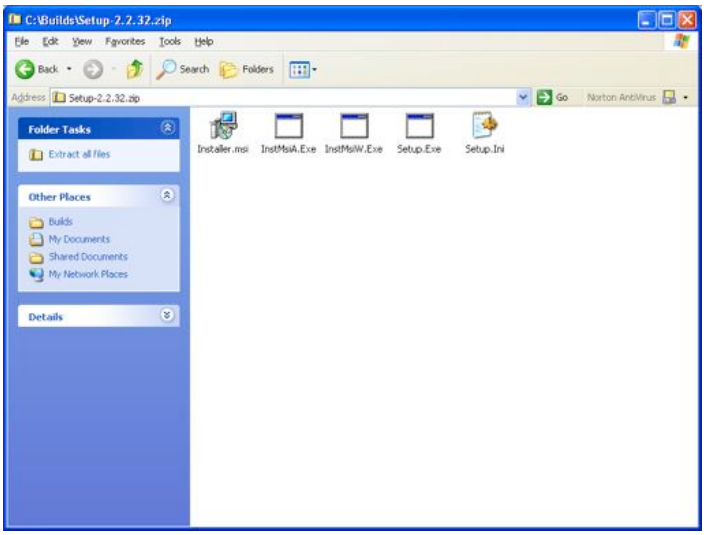
5. It will display a series of growing bars to show Broadcast Pix Software being removed.



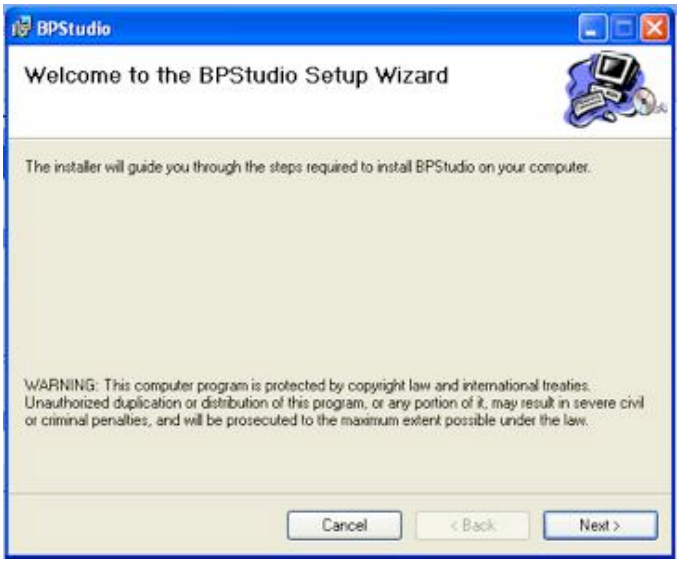
To Load the New Version of Broadcast Pix Software:

1. Open the zip file that you downloaded by double-clicking on it.

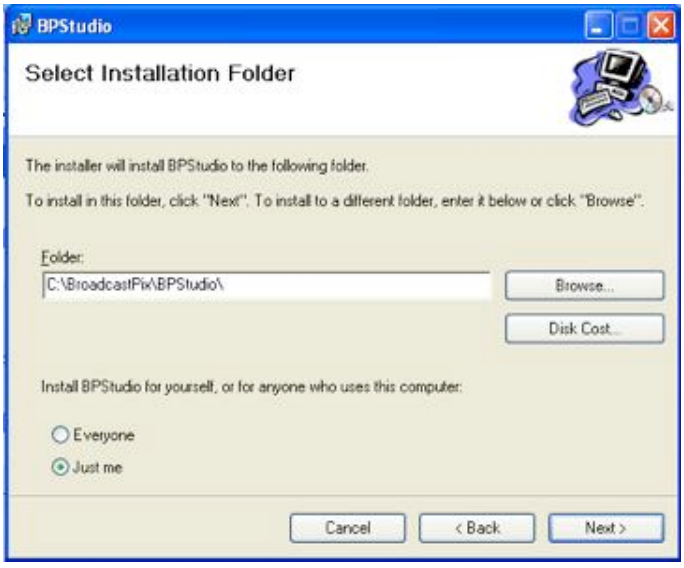
2. Double-click on **Setup.exe** file.



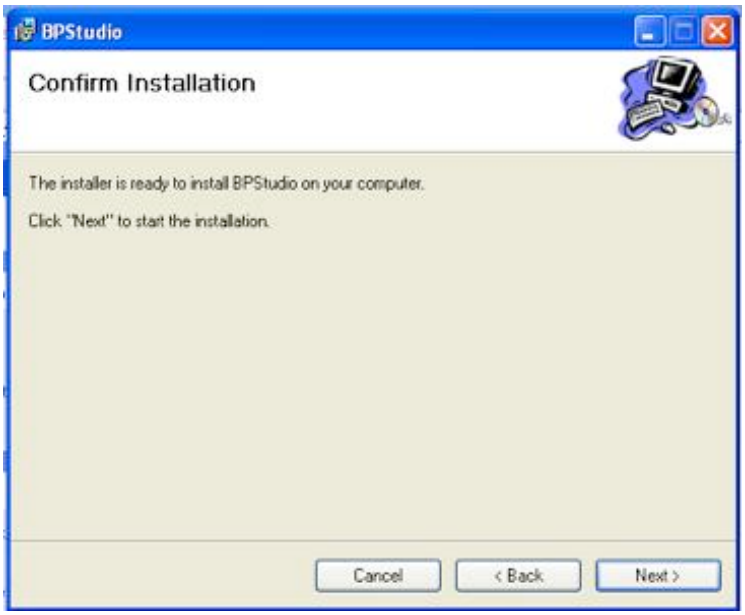
3. This will open the Broadcast Pix Software Installation Wizard. Click on **Next.**



4. To add Broadcast Pix to your startup, click on the checkbox, and click on **Next.**

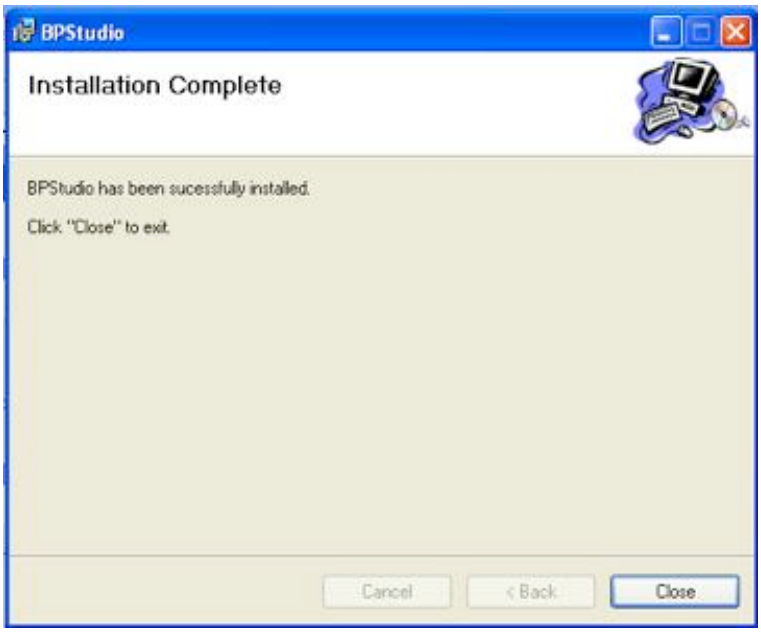


5. Again, click on **Next.** And the appropriate files will be installed. During major upgrades the hardware code will also be installed, it is important not to interrupt the installation, as harm to the video cards may occur.



6. When done, this window will appear. Click on **Close.**

7. **Shutdown** the computer, and then **reboot** to the computer to refresh the memory.



A.2 Updating the Control Panel and Break-out-Box Firmware

While most upgrades are accomplished with the Broadcast Pix software as described in the previous section, it is sometimes desired to upgrade the firmware that lives inside the control panel or iBoB.

No special tools are required as this upgrade uses the systems serial cable, but it is significantly more complex than updating the workstation application so, before attempting it you should call Broadcast Pix technical support, see section A.10. There are also hardware, standard, and option specific versions of panel and iBoB firmware, so **please** supply the serial number of the panel and iBoB when contacting support.

Detailed instructions on how to upgrade both the panel and iBoB, as well as the most recent software for them can be found at: http://www.broadcastpix.com/support.html

A.3 Installing System Options

When System Options are purchased they require a unique number code to activate them for use. On new Slate systems, this code comes pre-installed so no further steps are necessary. On existing systems, where options are purchased after the fact, an activation code will be provided and it is necessary to manually enter this code. This number is unique to your Slate system, should you need it again it is available from customer support by providing the Slate serial number of your system, which is also displayed on the Systems Options menu. In BPswitcher select **Setup, System Options**, in the Options window **select the option(s)** from the drop down list and **enter the code** provided, as shown below. Click on **Enable option,** then **Close.** A restart of the application is necessary to use the system options.
When updating from a version older than 6.x, an **Options Installer** icon will appear on the desktop of the workstation. It is necessary to run this application, prior to using the BPswitcher software to ensure proper installation of your options. For assistance in upgrading your software please contact technical support.

A.4 Building a Show in Classic Mode

Classic mode is the show editor that shipped with Version 1 and 2 of the Broadcast Pix system software, which was replaced by PixMaster in Version 3. It is in this manual for those users that use it as a supplement to PixMaster to set up different data storage libraries than the standard libraries.

To switch from PixMaster show editing to Classic

On the **Setup** drop down menu, select **Engineering Settings**, and then **Show Editor** and then **Classic**.

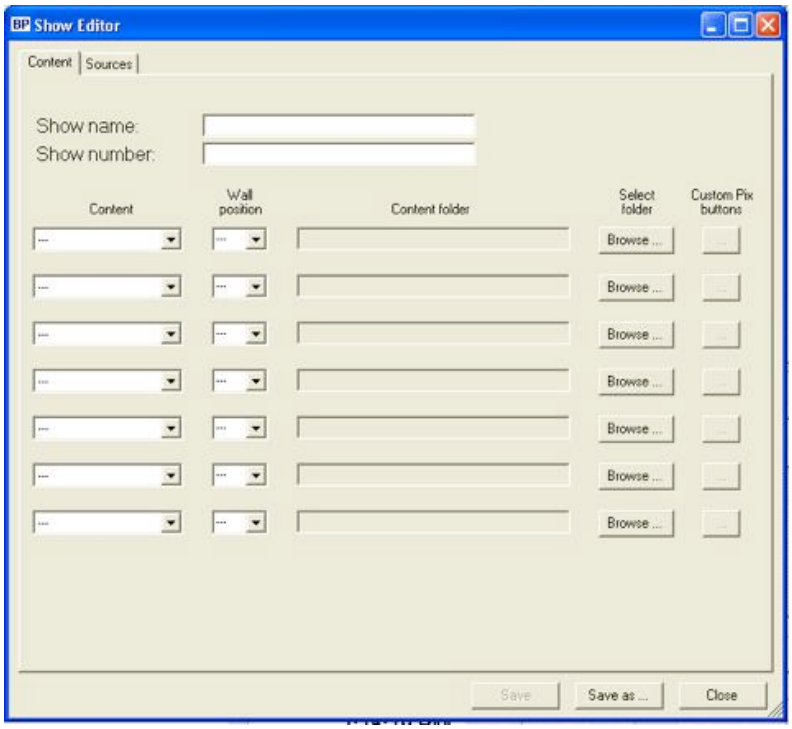
A.4.1 Create a Show With the Classic Show Editor

To Create a Show:

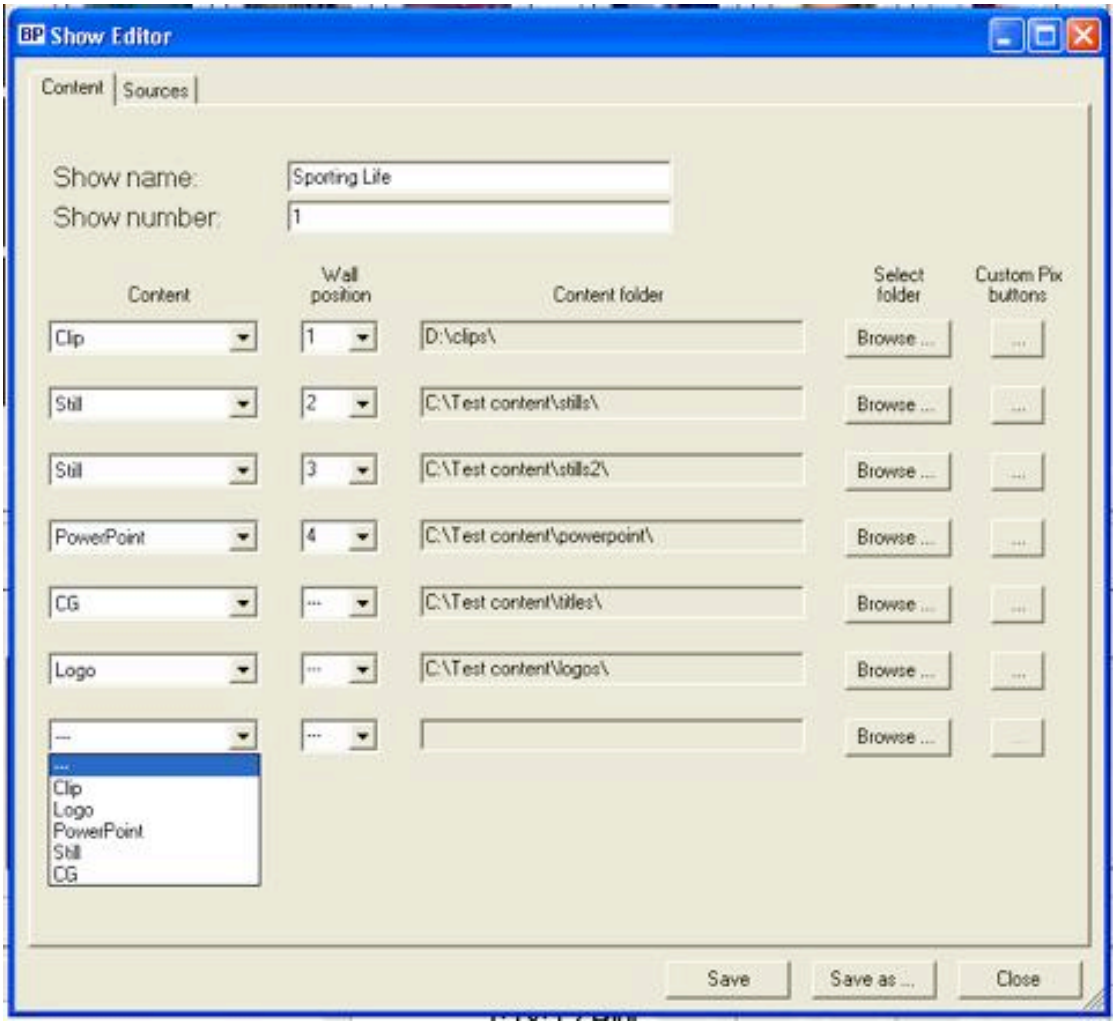
1. Start the Broadcast Pix application by clicking on its icon on the desktop GUI, which will bring up the Multi-View window, which contains a blank Multi-View, and various drop down menus at the top.

2. On the File drop down menu, select **New Show**, as shown below, and the Show Editor window will appear.

3. In the **Show Editor** window, fill in the Show Name and any show number.

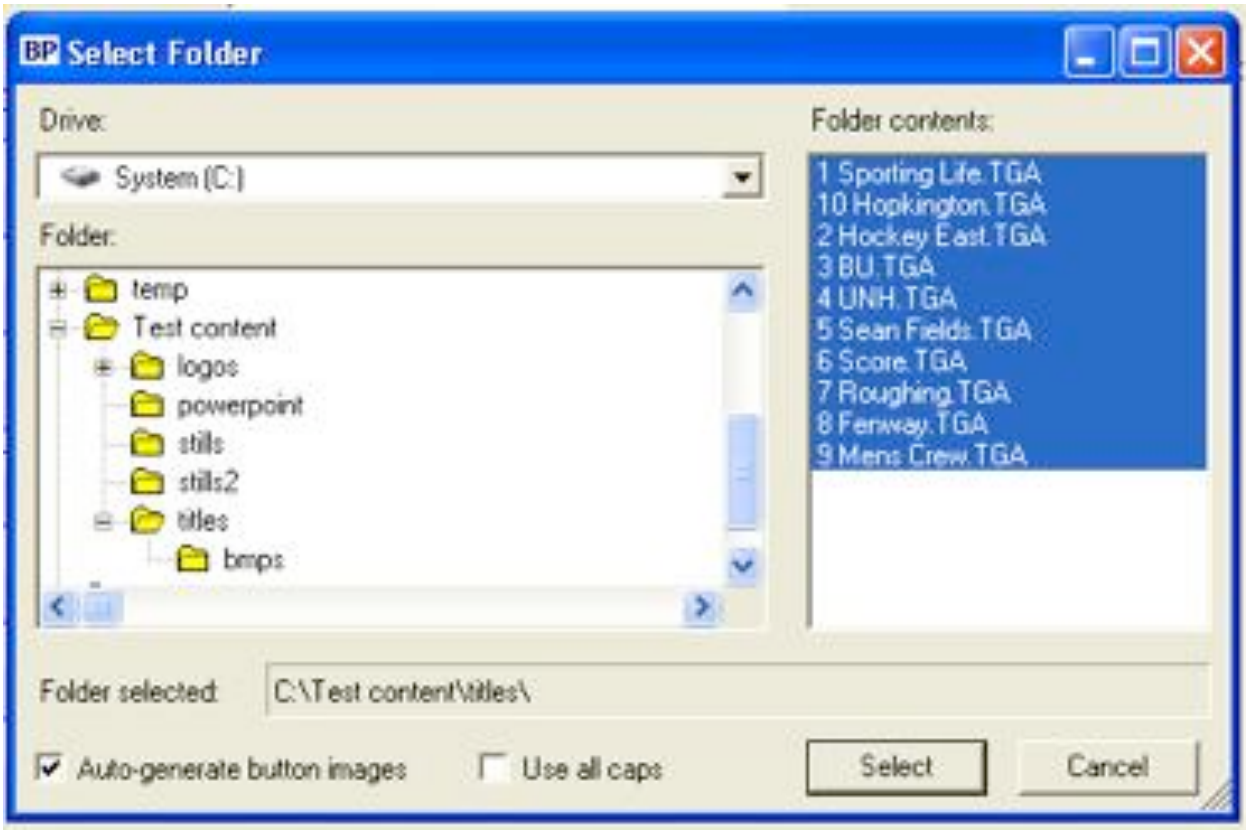


4. In the content column of the **Show Editor** window, for each desired device, select it from the drop-down menu, as shown below:



5. Identify the the content you wish for the selected device.

Once you have established the type of the first device (Clips in this example), select which content to use for the device by clicking on the **Browse** rectangle after the content folder column, as shown on the previous page. This will open the **Select Folder** window shown below. Then browse to the folder in the workstation that contains the desired content. In this example, for titles select the C Drive and then the desired folder of titles, which in this example is a Folder called “titles”. The content of the clips folder will be displayed and highlight blue as shown below:



If there are elements within the content folder that you do not wish to include, they may be individually de-selected by holding down the CTRL key in the lower corner of your keyboard and then clicking on individual content elements. When removed they will no longer be highlighted in blue.

Then press the **Select** button at the bottom of the **Select Folder** window.

6. **Save** the show

7. Switch the Show Editor back to PixMaster for editing, as shown on A.4.

A.5 Control panel Internal Operation, Technical Appendix

The Broadcast Pix physical panel is usually under the control of the Broadcast Pix workstation. However if the workstation or the connecting network goes offline, then the panel reverts to internal **"Fail-Safe"** operation, as described in section 4.11. This appendix describes this standalone behavior, and some of the engineering settings that are also accessible from it.

Sequence of Events

When the panel powers up, it attempts to connect with the workstation at its default IP address of 192.168.53.250. If it fails to find either a workstation with that address or a Broadcast Pix Switcher application open to a show, then it asks the operator what it should do. It does the same thing if a problem develops during normal operation.

During normal operation the workstation communicates with the panel every 5 seconds, even if there is no other traffic, and the panel always responds. These keep-alive ping messages let both the panel and the workstation know that the situation is normal. A watchdog process in the panel software notices if these signals stop. If they do, then the TCP/IP connection to the workstation is closed, the panel buttons are cleared, and three choices are offered to the operator, which are displayed on the PixButtons in the upper right corner of the panel. The control panel display is also updated to notify the operator what is going on.

There is also a way an operator can force this condition. Turn on the Shift button, select the Mem/Setup device button, and then press the leftmost PixButton of the three in the top right corner of the control panel, which will be displaying, "Go Off Line". This causes the panel to close the communications link to the workstation.

The three choices available in this off-line state are:

1. Join the Show — to connect (or reconnect) with the workstation
2. Fail-Safe — communicate directly with the iBoB and/or Router
3. Panel Setup & Test — bring up an array of additional sub menu options

Join the Show

Whenever a panel is not connected to a workstation, it continuously attempts reconnection. If successful the Jack the Show button changes from green to orange.

Pressing this button when it is orange, immediately connects to the current running show on the workstation.

Pressing this button when it is green, causes the panel to reboot itself. This can be useful to recover from an unusual condition, akin to cycling the power.

Fail-Safe

By selecting this option the operator commands the panel to control the Break Out Box (iBoB) and/or the router directly using the backup serial channel. The program and preview rows of buttons are activated, and the program Pix buttons are labeled appropriately. Inputs 1 through 8 are labeled 1 through 8, indicating the input channels of the iBoB or router. Inputs 9 through 16 are labeled RTR 1 through RTR 8, indicating cascaded router inputs 1 through 8. Inputs 17 and 18 are labeled Show Prog. and Show Prev., indicating their use as the connections from the Broadcast Pix workstation running the current show. The Cut button is also illuminated, indicating that it can be used to perform cuts between program and preview.

When entering the Fail-Safe mode, program and preview are automatically connected to the input that the most recently run show defined as the fail-safe source." If no source was so identified, then program is set to Show Prog. and preview is set to Show Prev. For this fall back mode of operation to work most effectively, be sure that the video source connected to fail-safe source is the one that you want to go on air when Fail-safe mode is entered.

Two other buttons are illuminated while in fail-safe mode. These are the Join The Show and the Panel Setup & Test buttons. These allow selection of these two modes.

When in Fail-Safe mode, if the operator wants to switch back to the show running on the workstation, first check on the state of the workstation by calling up on preview the workstation's program output by selecting Show Prog. on preview If it looks good, a seamless reconnection to the show can be achieved by first selecting Show Prog. on program before pressing the Join The Show button.

Panel Setup & Test

Selecting this option opens a menu of many sub menu options. It also sets up a button labeled “Select Panel Mode”, which instantly terminates any of the sub modes and returns the panel to this Panel Setup & Test mode. The sub menus are:

Turn Off/On Sleep	turns off or forces on sleeping – see below about sleep
Test VFD	displays and scrolls all possible characters through the display
Test Ctrls	allows testing and interpretation of all controls
Test Pix	allows testing of each Pix button display
Show Knobs	displays the raw data from the three rotary encoders
Show Buts	displays the raw data from all the pushbuttons
Show Joys	displays the raw data from the lever and joystick
Show Date	displays the version date of the panel software
Fail-safe Names	cycles through several sets of names for the input sources
Set URL	allows editing of the TCP/IP address of the workstation
Light Show	cycles through all the lights in an eye-catching manner
Log Bgr	allows selection between background and foreground logging
Log Mode	allows selection of the current logging level (see below)
Pose	prepare the display for a picture
Kudo	display a list of the people who assisted product developers
Who Did It	display a list of the people who helped develop this product

Sleep

Normally the panel falls asleep after 30 minutes of inactivity. While asleep all panel buttons are extinguished, and a single dot scrolls through the display. A press of any button awakens the panel, but is otherwise ignored.

If sleeping is not desired, press Turn Off Sleep to disable it The second line of the display will now say, “Sleep has been disabled.”

When sleep is disabled the Turn Off Sleep button changes to Force To Sleep and if pressed, re-enables sleeping and forces the panel asleep immediately.

A.6 Broadcast Pix Slate Analog Video Connector Pin-outs

Composite Video (single BNC connection):

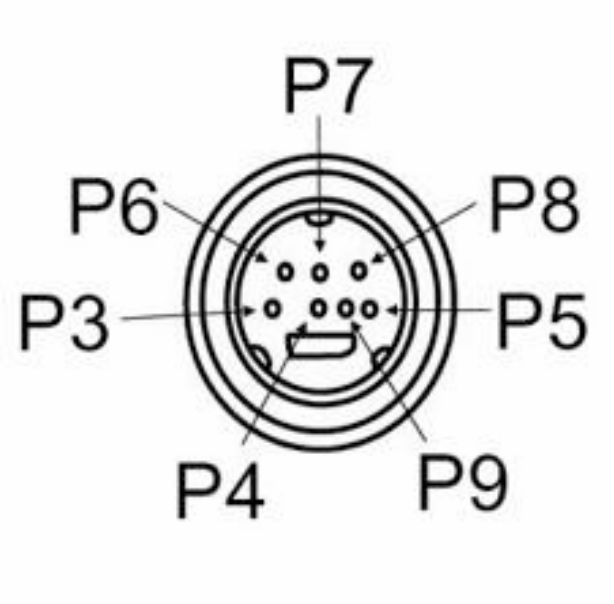
Pin 6 - Center Pin on BNC , Pin 3 - Shield/Ground

Component Video (triple BNC connections):

(Y) Pin 6 - Center Pin , Pin 3 - Shield/Ground (Green)

(U) Pin 9 - Center Pin , Pin 7 - Shield/Ground (Blue)

(V) Pin 4 - Center Pin , Pin 7 - Shield/Ground (Red)



Male 7-Pin Geoport Mini-Din

Breakout Cable

A.7 Broadcast Pix Slate Analog audio breakout cable
Revision A

DB25 Male to 4 male and 2 female XLR. 8 foot length shielded audio cable.
All inputs and outputs are balanced line level signals.

XLR label	XLR type	XLR pin	DB25 Pin #	Wire color (optional)	BPIX Signal name
Clip Record Left	Female	2	10	Red	AINL+
Clip Record Left	Female	3	23		AINL-
Clip Record Left	Female	1	11		GND
Clip Record Right	Female	2	24	Black	AINR+
Clip Record Right	Female	3	12		AINR-
Clip Record Right	Female	1	25		GND
Clip 1 Left	Male	2	4	Lilac	A1OUTL+
Clip 1 Left	Male	3	17		A1OUTL-
Clip 1 Left	Male	1	5		GND
Clip 1 Right	Male	2	18	Green	A1OUTR+
Clip 1 Right	Male	3	6		A1OUTR-
Clip 1 Right	Male	1	19		GND
Clip 2 Left	Male	2	1	White	A2OUTL+
Clip 2 Left	Male	3	14		A2OUTL-
Clip 2 Left	Male	1	2		GND
Clip 2 Right	Male	2	15	Grey	A2OUTR+
Clip 2 Right	Male	3	3		A2OUTR-
Clip 2 Right	Male	1	16		GND
Extra GND			8		GND
Extra GND			22		GND
No Connect			7		open
No Connect			9		open
No Connect			13		open
No Connect			20		open
No Connect			21		open

Grounds 2,5,8,11,16,19,22,25 can all be tied common and used for shield at DB25 end.

A.8 Broadcast Pix Slate Technical Specifications

Video Specifications

• Internal 10-bit uncompressed component digital processing
• Progressive 480p/59.94 in NTSC, or 576p/50 in PAL
• HD SDI I/O formats 720p/59.94, 720p/50, 1080i/59.94 and 1080i/50
• DVI I/O formats DVI-I, DVI-D, VGA, analog component (input only), 1080p (output only)
• SD SDI I/O format SMPTE 259M (601)
• Analog I/O formats composite, Y/C, component/YUV with 10-bit conversion
• NTSC or PAL switchable
• 4:3 or 16:9 switchable or simultaneous with DualAspect
• Requires analog reference, can accept synchronous and/or a-synchronous source
• 1 frame of delay with SD synchronous sources
• 2 frames of delay with SD a-synchronous sources
• 1.7 frames of delay with HD 720p & genlocked sources in IMAG production
• 3 frames of delay with HD 1080i & genlocked sources

Clip Audio Specifications

• 100, 1000, 2100: embedded in the SDI stream (SD only) SMPTE 272M, and analog stereo audio I/O, balanced line level
• 2100 adds: AES/EBU digital I/O, balanced line level

Workstation

• Software: Broadcast Pix Switcher Version 6, Inscriber TitleMotion Pro CG, Windows XP Pro
• Hardware: Pentium D Dual-Core, dual disks, dual monitor support, R/W DVD/CD, keyboard, mouse
• Requires a VGA/DVI Monitor, can accept two: 1280x1024,1680x1050 and many other sizes.

Weight	Power	Dimensions
100/1000: 56 Lbs/25Kg	450 watts	19w x 20d x 7h in / 48w x 51d x 18h cm (4RU)
2100: 68 Lbs/31Kg	500 watts	19w x 20d x 7h in / 48w x 51d x 18h cm (4RU)

Control Panel (1000, 2100)
18.5w x 13d x 5.5h in / 47w x 33d x 14h cm

iBoB (2100)
19w x 3d x 10.5h in / 48w x 8d x 27h cm (6RU)

A.9 Glossary

AutoAspect	A Broadcast Pix feature which allows you to mix 4:3 and 16:9 content in the same show, while maintaining the native aspect ratio of each element. See section 1.2.9.
Aux	Auxiliary output, which can be assigned to any internal or external source for a separate monitor or record deck. See section 4.9.
Chromakey	A method of removing a solid background color (usually green or blue) and replacing with a different image. See section 4.6.
Click-On and [ ]	This is nomenclature used in this manual to distinguish between when a panel push-button is used or a mouse. Click-on refers to the mouse, while any push-button is enclosed with [ ], such as “press the [Cut] button”.
Clip Store	Is a Broadcast Pix device inside the workstation onto which clips may be recorded and then played back as a show element. Also referred as a DDR. See section 6.
CG	Character Generator, is the device inside the workstation that creates graphics. Inscriber TitleMotion Pro is the CG. See section 5.
Control Panel	The Broadcast Pix physical control panel, that is operated with push-buttons, knobs, joystick and fader arm. It is the 99.9% the same as the SoftPanel the only exception is how shifted sources are illuminated.
Devices	Studio components which the device controls may be assigned to. See section 2.3.
Device Controls	The area of the control panel that can be assigned to control any device. It is surrounded in black. See 2.4.
Display	The large 2 line read out at top of the panel.
DualAspect	A Broadcast Pix feature which enables the output of both 16:9 and 4:3 material simultaneously. See section 1.9.5.

Glossary Continued

DVE	Digital Video Effects. The device inside the workstation that creates a DVE Box in a keyer, and is also used for advanced transitions, including push-offs and squeezes. See section 4.5.
DVE box	A picture-in-picture with a border around it, which can be assigned to a keyer, to hold any source, to create an "over-the-shoulder" picture.
External Live Source	A source that is connected to the Slate cards or iBoB, including cameras, VTRs and other studio devices.
iBoB	Intelligent Break-out-Box for the Slate 2100 Switcher.
Ingest	The process in which you record content to the workstation's clip store using the Clip Ingest application. See section 6.1.
Internal Source	Sources originated from inside the workstation include: black, clips, stills, logos and CGs.
Key	An overlay that can be placed on top of the background video to hold a graphic or DVE box. Up to 6 keys available.
iBoB DSK	The downstream key that is inside the iBoB, used to superimpose a legacy CG on top of all video. See section 4.8.
Multi-View	The graphical user interface (GUI) that appears on the VGA monitor and contains thumbnails of libraries and sources.
PixButtons	The 28 picture buttons on the control panel which have built in displays which can change. See section 2.2.
PixMaster	The application to create, edit or delete a show's settings. See section 3.
PixPad	The group of 12 PixButtons in the device control portion of the control panel. See section 2.4.2.
PowerAux	A Broadcast Pix feature which enables Keys to be overlaid onto an Aux output. See section 4.9.3.
Preview	Video shown on a preset monitor used by the operator before content is taken to air, to avoid mistakes.

Glossary Continued

Private Hub	The Ethernet hub that comes with the system to connect the control panel, workstation and router. Only on a 2100.
Program	The on-air video, with background and keys, as it is seen by the audience.
Sample Show	The initial show that comes with the system from the factory with generic content. See section 1.5.
Show	The parameters set in memory which includes which sources are mapped to the switcher, and which content is assigned. See section 3.
SoftPanel	The Broadcast Pix control panel on the VGA monitor, that is operated with a mouse. Its operation is identical to the physical control panel, except shifted sources blink on the panel, and the SoftPanel does not blink, so instead shifted sources are shown by illuminating a small indicator light above each source button.
Source	Any external live or internal video source, such as a camera, clip, title, etc. Any source may be assigned to the three rows of source buttons when using PixMaster.
Source Controls	Parameters, such as AutoAspect treatments and Chromakey controls, which reside on the actual source. See section 4.6.
Tally	A signal lamp (usually red) on a camera, camera control unit or monitor to indicate that a source is on program/on-air. See sections 1.2.10 or 1.3.4.
VGA Monitor	A computer monitor. It is used to show the Broadcast Pix Multi-View, show editor, Inscriber and other software. (Resolution of at least 1280 x 1024 is needed).
VTR	Video Tape Recorder. A professional video tape deck used as a source input or a record output from the switcher.

A.10 Broadcast Pix Contact Information:

Toll Free:	+1-866-914-9484
Phone:	+1-978-600-1100
Technical Support:	+1-978-600-1098
Fax:	+1-978-663-2811
Website:	www.broadcastpix.com
	Register on-line at www.broadcastpix.com/support.html for access to the latest software downloads and support information.
Support E-mail:	support@broadcastpix.com
Mailing Address:	3 Federal Street Billerica, Massachusetts 01821 USA

Broadcast Pix welcomes suggestions to this manual, please send to manual@broadcastpix.com

Notes